PUBLIC ACCESS TO ENVIRONMENTAL INFORMATION AND PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING: A MALAYSIAN CASE STUDY

by

Nur Syafrina Mohd. Sharif

Imperial College London

Centre for Environmental Policy

A thesis submitted for the degree of Doctor of Philosophy (PhD)

November 2016

DECLARATION OF ORIGINALITY

The author declares that the work presented in this thesis is entirely her own, and that where any material could be construed as the work of others, it is fully cited and referenced, with appropriate acknowledgement given.

COPYRIGHT DECLARATION

The copyright of this thesis rests with the author and is made available under a Creative Commons Attribution Non-Commercial No Derivatives licence. Researchers are free to copy, distribute or transmit the thesis on the condition that they attribute it, that they do not use it for commercial purposes and that they do not alter, transform or build upon it. For any reuse or redistribution, researchers must make clear to others the licence terms of this work.

Part of the research work discussed in this thesis met the accepted international academic standard for blind peer review and was selected for oral presentation at the Sixth Asian Conference on Sustainability, Energy and the Environment (ACSEE) (9 June - 12 June, 2016, Japan), of which the conference theme was “Justice and Sustainability”.

ACKNOWLEDGEMENTS

This thesis serves to present not only the findings and outcomes of the research work that I have pursued in the past three and a half years at Imperial College London, but also of the unique learning opportunities that I have been truly fortunate and blessed to experience in various locations as well as through the diverse groups of people I have met along the way. As a “Third Culture Kid” who was raised in several countries from an early age, I would attest that such opportunities for growth, and exposure to new knowledge, contacts, places and cultures, have helped to enrich my perceptions of the world, the environment we live in and the people with whom we share it. In this PhD journey especially, those opportunities have contributed to the development of my research and findings. However, this entire process and the outcomes that were produced from it would not have been possible without the support and guidance provided to me by some special individuals whom I wish to sincerely thank.

I would like to express my deepest gratitude and appreciation to all who have made this endeavor and its completion possible for me. I am especially thankful to my supervisor, Ms Karen Makuch, for her expert advice and time spent discussing the focus and direction of my research topic, her detailed and critical review of my working drafts, her constant show of support, enthusiasm and encouragement in my research work, and for her friendship and laughter. I am also grateful to Dr. Zen Makuch for being one of my advisors and providing me with helpful advice, ideas, suggestions and critical feedback towards improving my research, as well as for his positive and encouraging comments on my presentations, which were followed by valuable tips for further improvements that I highly appreciated. I would like to thank Dr. William Sheate as well for agreeing to be one of my advisors and for providing his valuable comments, suggestions, and review of my research progress reports as well as helpful advice on my survey data.

I would not have survived this adventure (and all my previous adventures around the world) without the love, care, support and motivation that arrived in various forms from my amazing family. I wish to send out a big and heartfelt thank you to my mother who has been my main source of strength and inspiration since childhood. I would not have become who I am today without her love, patience and support over the years. Thank you mom, for sharing with me your experiences and wisdom, and for teaching me the importance of hard work, resilience, integrity and the essential need to smile, laugh and remain positive, even in difficult times. I grew up watching you pursue your Master's, then your PhD in foreign lands, and I witnessed how you persevered to achieve your dreams, and to ensure that your children would have better opportunities in life. I am immensely proud, honored and grateful to be your daughter. I am also thankful to my father for his unwavering support and encouragement in my decision to pursue my studies, and for the constant prayers and du'as he has made towards my overall wellbeing and PhD progress. I am grateful as well to my brother for his show of support, prayers, humor, and for keeping me updated on the health and activities of our feline family members.

I wish to also express my gratitude to the Government of Malaysia for sponsoring my PhD studies in London, and Imperial College for providing me the opportunity to pursue the PhD at the Centre for Environmental Policy (CEP). I am also thankful to the Malaysian Ministry of Natural Resources and Environment for allowing me to be temporarily attached under a few of its departments during my field work in Malaysia. Many thanks as well to all the participants who agreed to contribute to my research by taking part in the survey and interviews including those from the Government, such as heads and officers from the Ministry of Natural Resources and Environment, the Department of Environment (DOE), the Environmental Management and Climate Change Division (BPASPI), the Biodiversity and Forestry Management Division (BBP), the Ministry of Science, Technology and Innovation (MOSTI), the Ministry of Energy, Green Technology and Water (KeTTHA), the Atomic Energy Licensing Board (AELB), and Nuclear Malaysia; those from civil society, such as representatives from the coalition of

Malaysian Environmental NGOs (MENGO), WWF-Malaysia, Save Malaysia Stop Lynas (SMSL), and the Centre for Independent Journalism (CIJ); and also the representatives from Lynas Corporation.

I would like to particularly thank Dato' Dr. Ahmad Kamarulnajuib Che Ibrahim from the DOE, for taking time out of his busy schedule to not only meet and speak with me, but to proactively offer his invaluable opinions on my research topic and lend me helpful reading materials related to my research. He was also instrumental in organising my trip to the Lynas Advanced Materials Plant in Gebeng, Kuantan, which was made possible with the help of DOE officers Cik Razatul Aini Razlan and Puan Noor Shahniyati Ahmad Shukri, as well as Datuk Mashal Ahmad from Lynas Corp.

I wish to thank my relatives in Malaysia for their show of love, support, encouragement and prayers, and to my friends at the CEP, in Imperial College, and in London as well as those located across the globe namely in Malaysia, the United States, Spain, Italy, Malta, Lithuania, and Japan for their friendship, laughter, messages, letters and cards, birthday gifts and positive energy sent from near and far throughout the course of my study. Thank you all for making me feel loved, and for being understanding while I was absent, offline, and buried in my research work. I would also like to extend my appreciation to the administrative staff at the CEP – Shane, Michelle, Karen, Ruth, and former staff member Isabelle as well as our Faculty Librarian at the Imperial College Central Library, Katharine, for all your kind assistance throughout the PhD process.

Most importantly, I am grateful beyond words to the Almighty, All-Merciful, and All-Knowing Allah (*Subhanahu Wa Ta'ala*) for granting me the strength, determination and inspiration to keep going, for giving me this exhilarating life, in all its good and bad, and for the gift of this beautiful planet and its bounties.

Alhamdulillah.

DEDICATION

For my mother, Sharifah Zarah,
and my motherland, Malaysia.

ABSTRACT

Access to information, access to public participation and access to justice are recognised as the pillars of sound environmental governance, and are at the heart of environmental democracy. Collectively referred to as “environmental access rights”, they are promoted under Principle 10 of the Rio Declaration on Environment and Development, and form the core pillars of a legally binding international instrument known as the Aarhus Convention. Malaysia, a developing country that has undergone rapid change, is striving to achieve its development goals through “Vision 2020”, but still struggles to balance between the economic, social, and environmental aspects of its development. By implementing transformation programmes, the Malaysian Government is displaying efforts to transition its “government-knows-best” approach into one that is more transparent, accountable, inclusive and citizen-centric. However, the findings of this empirical, exploratory research indicate that public access to environmental information and participation in environmental decision-making remain limited in Malaysia. Furthermore, the author’s investigation into two scenarios that took place in the country: 1) The Rare Earth Controversy in Kuantan, and 2) The Major Floods of 2014/2015, identified examples of how deficits in access to environmental information and public participation in Malaysia’s current system of environmental governance could arguably exacerbate such situations, and may contribute to social unrest as well as lack of confidence in the Government. Drawing from evidence of the research findings, the author suggests that Malaysia could benefit from enhanced access to

environmental information as well as public participation in environmental decision-making, and thus proposes a framework to help the country progress towards achieving this objective. This research breaks new ground as it reports on recent events and developments (or lack thereof) in an area of study that has been sparsely explored in Malaysia. It is also timely as the country still faces environmental deterioration and increasing public demands for improved Government transparency, accountability, and citizen engagement. It is hoped that the research work contained in this thesis will enrich the existing knowledge on the subject area of environmental governance, specifically environmental access rights, and contribute towards promoting good environmental governance and democracy in Malaysia, the ASEAN region, and across the world.

TABLE OF CONTENTS

LIST OF FIGURES **17**

LIST OF TABLES **18**

LIST OF ABBREVIATIONS **19**

GLOSSARY OF KEY TERMS & NAMES **25**

CHAPTER 1: INTRODUCTION **31**

1.1 INTRODUCTION & PROBLEM STATEMENT 31

1.1.1. Environmental issues and challenges 31

1.1.2. The importance of ("good") environmental governance 33

1.1.3. Promotion of environmental access rights under Principle 10 37

1.1.4. The case of Malaysia 39

1.2 RESEARCH AIM & SCOPE 42

1.3 RESEARCH QUESTIONS & OBJECTIVES 43

1.4 CHAPTER SUMMARY 47

CHAPTER 2: METHODOLOGY **48**

2.1 INTRODUCTION 48

2.2 RESEARCH DESIGN 48

2.3 CASE STUDY APPROACH 50

2.4 DATA COLLECTION 56

2.4.1. 1st Phase 56

2.4.2. 2nd Phase 57

2.4.3. 3rd Phase 58

2.4.4. The Interviews 60

2.4.5. The Survey 63

2.4.6. Ethics in Research 66

2.5 THE RESEARCH STRATEGY STAIRCASE 67

2.6 LIMITATIONS 70

2.6.1. Sources of Literature 70

2.6.2. Case Study 71

2.6.3. Collection of Information 72

2.6.4. Time, Location and Events 76

2.7 THEORETICAL FRAMEWORK 77

2.7.1. Governance Theory 78

2.7.2. Theory on Deliberative Democracy 79

2.7.3. Theory on Environmental (or Ecological) Citizenship 80

2.8 CHAPTER SUMMARY 83

CHAPTER 3: LITERATURE REVIEW & ANALYSIS OF KEY CONCEPTS 85
3.1 INTRODUCTION 85
3.2 ENVIRONMENTAL GOVERNANCE 87
3.2.1. Challenges in Global Environmental Governance 87
3.2.2. Focusing on environmental governance at the national level 90
3.2.3. Good Environmental Governance 91
3.2.3.1. Good Governance 95
3.2.3.2. Good (and/or Effective) Environmental Governance 98
a. The Seven Core Precepts by Fulton and Benjamin 100
b. Lessons from the APFED 102
c. Eight Principles by the Natural Resources Defense Council (NRDC).. 103
d. A Description by the International Union for Conservation of Nature 104
e. The OECD's Ten Guiding Principles 105
3.2.4. Findings and Research Working Definitions 109
3.3 ENVIRONMENTAL ACCESS RIGHTS 113
3.3.1. Linking Human Rights, Democracy and the Environment 113
3.3.2. The Pillars of Principle 10 and the Aarhus Convention 118
3.3.3. Access to Environmental Information and Public Participation in Environmental Decision-Making 123
3.3.3.1. Access to Environmental Information 131
a. Clarifying the Term 131
b. Active Provision of Environmental Information 133
3.3.3.2. Public Participation in Environmental Decision-making 136
a. An Opportunity to Express One's Voice 136
b. The Benefits of Public Participation 143
3.4 POTENTIAL FOR GLOBAL AND NATIONAL INFLUENCE OF PRINCIPLE 10 AND THE AARHUS CONVENTION 148
3.5 THE MALAYSIAN SETTING 153
3.5.1. Environmental issues in Malaysia 153
3.5.2. Environmental legislation and policies in Malaysia 155
3.5.3. Malaysia's top-down approach in environmental decision-making.. 156
3.6 CHAPTER SUMMARY 161

CHAPTER 4: SUSTAINABLE DEVELOPMENT & CULTURE IN MALAYSIA: A NATION & ENVIRONMENT UNDER TRANSFORMATION 164
4.1 INTRODUCTION 164
4.2 PART 1: VISIONS FOR SUSTAINABLE DEVELOPMENT IN MALAYSIA…. 166
4.2.1. The Drive to Develop 166
4.2.1.1. Malaysia Incorporated: A Pro-Business Strategy 168
4.2.1.2. Vision 2020 171
4.2.1.3. The 5-Year Malaysia Plans 176
4.2.1.4. Stages of Environmental Policymaking in Phases of Development 179
4.2.2. Main Environmental Legislation 182
4.2.2.1. Constitution of Malaysia 182
4.2.2.2. Environmental Quality Act 1974 184
4.2.3. National Policies Relating to the Environment 186
4.2.4. The Government Transformation Agenda 199
4.3 PART 2: CULTURAL INFLUENCES 203
4.3.1. Culture: Definition and Dimensions 204
4.3.2. Malaysia Truly Asia: A Unique Cultural Hybrid 207
4.3.3. Cultural Traits of Malaysia 211
4.3.3.1. Status, Hierarchy and Power Relations 213
4.3.3.2. Social Relations, Communication and Expression 216
4.3.3.3. Religion and Beliefs 223
4.3.3.4. Politics 226
4.3.3.5. Patriotism 228
4.3.3.6. Internet and ICT 229
4.4 CHAPTER SUMMARY 233

CHAPTER 5: PUBLIC ACCESS TO ENVIRONMENTAL INFORMATION & PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING IN MALAYSIA 238
5.1 INTRODUCTION 238
5.2 PART 1: ACCESS TO ENVIRONMENTAL INFORMATION 240
5.2.1. In Malaysian Legislation 240
5.2.1.1. Freedom of Information (State of Selangor) Enactment 2011 .. 242
5.2.1.2 Environmental Quality Act 1974 (EQA) 250
5.2.1.3 Town and Country Planning Act 1976 (TCPA) 252
5.2.2 In Federal Ministries, Departments, and other Government bodies 255
5.2.2.1. The Enviro Knowledge Management Centre 258
5.2.2.2. The DOE Environmental Quality Report (EQR) 261

5.2.2.3. The DOE Annual Report 263
5.2.2.4. The Department of Environment Web Portal 265
5.2.2.5 Air Pollutant Index (API) 267
5.2.2.6. Compendium of Environment Statistics 271
5.2.2.7. Online Notification and Registration of Environmentally Hazardous Substances (EHSNR) 273
5.2.2.8. Environment Institute of Malaysia (EiMAS) 276
5.2.2.9. Malaysian Investment Development Authority (MIDA) 277
5.2.2.10. 1Malaysia One Call Centre (1MOCC) 278
5.2.2.11. 1Akses 279
5.2.2.12. Public InfoBanjir 281
5.2.2.13. Malaysian Meteorological Department (MetMalaysia) 283
5.2.2.14. Official Portal of Parliament of Malaysia 285
5.2.2.15. e-Federal Gazette & e-Warta 287
5.2.2.16. Relevant Ministries 288
5.3. PART 2: PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING 290
5.3.1. Opportunities for Public Participation in Federal Legislation 290
5.3.1.1. Environmental Quality (Amendment) Act 1985 & Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987 (enforced by the DOE) 291
5.3.1.2. Town and Country Planning Act 1976 (Act 172) 301
5.4 THE ROLE OF NON-GOVERNMENTAL ORGANISATIONS (NGOs) 304
5.5 CHALLENGES AND LIMITATIONS TO IMPLEMENTATION 307
5.5.1. Restrictive Laws 308
5.5.1.1. Official Secrets Act 1972 (OSA) 309
5.5.1.2. Sedition Act 1948 (Revised 1969) (SA) 310
5.5.1.3. Printing Presses and Publications Act 1984 (PPPA) 314
5.5.2. Power Dynamics 317
5.6 CHAPTER SUMMARY 318

CHAPTER 6: THE RARE EARTH CONTROVERSY IN MALAYSIA 320
6.1 INTRODUCTION 320
6.2 UNDERSTANDING RARE EARTH ELEMENTS 322
6.2.1. What are Rare Earths? 322
6.2.2. Where can Rare Earths be found and mined? 325
6.2.3. Why are Rare Earths so important to the development of new technology and the Green Economy? 328
6.2.4. What are the economic and environmental challenges involved in REE processing and application? 331

6.3 CHINA'S GRIP ON RARE EARTHS: 336
6.4 MALAYSIA'S HISTORY WITH RARE EARTHS 341
6.4.1. The Asian Rare Earth Case in Bukit Merah 342
6.5 THE RARE EARTH CONTROVERSY IN KUANTAN, PAHANG 351
6.5.1. Part 1: Lynas and its Advanced Materials Plant 352
6.5.2. Part 2: Anti-Lynas Protests 360
6.5.3. Part 3: Responses to the Controversy by Lynas and the Government… 367
6.5.4. Part 4: Observations & Analysis of the Controversy 375
6.5.4.1. Public Confusion 375
6.5.4.2. Influence of Local and International Events 380
a. The Bukit Merah Incident 380
b. The Fukushima Daiichi Nuclear Meltdown 381
c. The 13th General Election in Malaysia 382
d. The Arab Spring 385
e. The "BERSIH" Rally 386
6.5.4.3. Distrust in Lynas Corp and Government Authorities 387
6.5.4.4. Internet and Social Media as Main Source of Information 391
6.6 CHAPTER SUMMARY 395

CHAPTER 7: THE MAJOR FLOODS OF 2014/2015 399
7.1 INTRODUCTION 399
7.2 PART 1: FLOODS IN MALAYSIA 402
7.2.1. The "Normal" and the "New Normal" 402
7.2.2. The Major Floods of 2014/2015: An Overview 404
7.2.3. Malaysia's Response to the Disaster 408
7.3 PART 2: THE STORY OF KELANTAN 410
7.3.1. The "Water Festival": Culture of Floods in Kelantan 410
7.3.2. Reactions To "Bah Kuning" & Other Observed Scenes 414
7.4 PART 3: THE STORY OF KEMAMAN 426
7.4.1. Strategic Flood Preparedness In Kemaman: A "Gold Standard" 426
7.4.2. Outcome of Implementing the Flood Preparedness Model 430
7.5 PART 4: ANALYSIS, DISCUSSION OF FINDINGS AND LESSONS LEARNT 436
7.5.1. What Do the Cases of Kelantan and Kemaman Reveal? 436
7.5.1.1. Information, Education and Awareness 436
7.5.1.2. Communications and Connectivity 440
7.5.1.3. Politics and Governance 448
7.5.1.4. Religion and Culture 450
7.5.1.5. Policy and Legislative Challenges 456

7.5.1.6. Other Observations 460
7.6 CHAPTER SUMMARY 464

CHAPTER 8: SUMMARY OF KEY DEFICITS & RECOMMENDATIONS 468
8.1 INTRODUCTION 468
8.2 SUMMARY OF KEY DEFICITS 469
8.2.1. Legislation 469
8.2.2. Institutional Structure & Human Resource 470
8.2.3. Information & Communications Technologies (ICT) 473
8.2.4. Environmental Knowledge & Awareness of Environmental Issues. 474
8.2.5. Culture 476
8.2.6. Ethics 476
8.2.7. Public Engagement 477
8.3 RECOMMENDATIONS 479
8.3.1. Framework for Enhancing Public Access to Environmental Information and Participation In Environmental Decision-making (ALAMRAKYAT) 479
8.3.1.1. Design of the Framework 480
8.3.1.2. Content of the Framework 481
8.3.1.3. Summary of the Framework's Pillars 485
8.3.2. Suggestions for Further Research 517

CHAPTER 9: CONCLUSION 519

REFERENCES 523

APPENDIX 577

LIST OF FIGURES

Figure 1: Basic Types of Designs for Case Studies 50
Figure 2: The Embedded Single-Case Study design adopted in this research... 51
Figure 3: Syafrina's PhD Research Strategy Staircase 69
Figure 4: UNESCAP's Characteristics of Good Governance 97
Figure 5: Environmental Governance 101
Figure 6: Lessons from APFED for Effective Environmental Governance 102
Figure 7: "Using information, consultation and active participation, governments strengthen their relations with citizens" 108
Figure 8: Traditions and Intersections of an Access Movement 116
Figure 9: The interconnection between the three pillars of Environmental Access Rights 120
Figure 10: Eights Rungs on a Ladder of Citizen Participation 139
Figure 11: Malaysia's Planning Horizon 168
Figure 12: The institutionalisation of environmental policy in six developing countries, including Malaysia. 198
Figure 13: The NKRAs and Ministers heading them 201
Figure 14: The cultural dimensions of Malaysia in comparison to the U.S 221
Figure 15: A screenshot displaying the DOE's homepage for the Enviro Knowledge Management Centre 259
Figure 16: Screenshot of search results from the DOE's online library or Enviro Knowledge Management Centre 260
Figure 17: Screenshot displaying pages from the 2012 EQR providing data on river quality in Malaysia 261
Figure 18: Screenshot from a DOE Annual Report displaying public awareness activities of the DOE. 264
Figure 19: Screenshot of the home page (top part) of the DOE's website 265
Figure 20: Screenshot of the home page (lower part) of the DOE's website 266
Figure 21: Screenshot of the DOE's API taken in October 2014 268
Figure 22: Screenshot of the API taken in March 2016 269

Figure 23: This screenshot displays the API Color Reference..... 269
Figure 24: Screenshot of the EHSNR homepage 275
Figure 25: MIDA's website 277
Figure 26: Screenshot of 1Akses search engine's homepage..... 280
Figure 27: Screenshot of Public InfoBanjir..... 282
Figure 28: Procedures for Preliminary EIA..... 294
Figure 29: Procedures for Detailed EIA 295
Figure 30: Malaysia's Trust in Institutions as reported by Edelman Trust Barometer 304
Figure 31: 15 REEs generally found in the REE market..... 323
Figure 32: Rare Earth Elements in an iPhone..... 331
Figure 33: Wooden houses and surrounding area damaged by the floods 406
Figure 34: A house completely destroyed by the flood 406
Figure 35: In thigh-high water levels on the streets of Kota Bharu, Kelantan ... 407
Figure 36: A young child was spotted playing in murky floodwaters..... 413
Figure 37: In Kuala Krai, Kelantan, one of the worst areas hit by the flood, this woman was spotted washing dishes in murky flood waters..... 416
Figure 38: Digital literacy, according to The Women's Learning Studio..... 444
Figure 39: THE ALAMRAKYAT FRAMEWORK..... 516

LIST OF TABLES

Table 1: Research Objectives 45
Table 2: Definitions & Descriptions of Access to Information & Participation in Environmental Decision-Making..... 125
Table 3: Main Functions of Access 147
Table 4: Malaysia’s National Policies Relating to the Environment 188
Table 5: The ALAMRAKYAT Framework Pillars with Strategic Measures & Examples 488

LIST OF ABBREVIATIONS

1MOCC	1Malaysia One Call Centre
ABC	Australian Broadcasting Corporation
AELA	Atomic Energy Licensing Act 1984
AELB	Atomic Energy Licensing Board
AFP	Agence France-Presse
API	Air Pollutant Index
ARE	Asian Rare Earth Sdn. Bhd.
ASM	Academy of Sciences Malaysia (*Akademi Sains Malaysia*)
ASX	Australian Stock Exchange
ATM	Malaysian Armed Forces
BBC	British Broadcasting Corporation
BERSIH	*Gabungan Pilihanraya Bersih dan Adil* (The Coalition for Clean and Fair Elections)
BN	*Barisan Nasional* (National Front)
CBD	Convention on Biological Diversity
CEO	Chief Executive Officer
CIJ	Centre for Independent Journalism (Malaysia)
CIMAH	Control of Industrial Major Accident Hazards. Used to refer to Malaysia's Occupational Safety And Health (Control of Industrial Major Accident Hazards) Regulations 1996.
CPPS	Centre for Public Policy Studies (at the Asian Strategy & Leadership Institute, Malaysia)
CSD	Commission on Sustainable Development
CTP	Community Transformation Programme
DEIA	Detailed Environmental Impact Assessment
DID	Department of Irrigation and Drainage Malaysia
DOE	Department of Environment, Malaysia
DOSH	Department of Occupational Safety and Health Malaysia

DPM	Deputy Prime Minister
EDI	Environmental Democracy Index
EHS	Environmentally Hazardous Substance
EHSNR	Online Notification and Registration of Environmentally Hazardous Substances
EI	Environmental information
EIA	Environmental Impact Assessment
EiMAS	Environment Institute of Malaysia
EPU	Economic Planning Unit (under Malaysian Prime Minister's Department)
EQA	Environmental Quality Act 1974
EQR	Environmental Quality Report
ETP	Economic Transformation Programme
EU	European Union
FGD	Flue Gas Desulphurisation Residue
FOEI	Friends of the Earth International
FOI	Freedom of Information
FOIA	Freedom of Information Act
FTP	Fiscal Transformation Programme
GEO5	Global Environment Outlook 5 Report
GIE	Gebeng Industrial Estate (also referred to as Gebeng Industrial Park)
GTP	Government Transformation Programme
HREE	Heavy Rare Earth Elements
IACES	Inter-Agency Committee on Environment Statistics
IAEA	International Atomic Energy Agency
ICJ	International Court of Justice
ICO	Information Commissioner's Office (United Kingdom)
ICRC	International Committee of the Red Cross
ICT	Information Communications & Technology

IPCC	Intergovernmental Panel on Climate Change
ISA	Internal Security Act 1960
IUCN	International Union for Conservation of Nature
IUCN RBA	IUCN Portal on Rights Based Approach to Conservation
IUPAC	International Union of Pure and Applied Chemistry
JPAM	Civil Defence Department
KeTTHA	Ministry of Energy, Water and Green Technology
KPIs	Key Performance Indicators
KPKT	Ministry of Urban Wellbeing, Housing and Local Government
LAC	Latin American and Caribbean
LAMP	Lynas Advanced Materials Plant
LDCs	Least Developed Countries
LREE	Light Rare Earth Elements
LTSF	Long-term storage facility
MAMPU	Malaysian Administrative Modernisation and Management Planning Unit
MAREC	Malaysian Rare Earth Corporation
MCA	Malaysian Chinese Association
MetMalaysia	Malaysian Meteorological Department
MIC	Malaysian Indian Congress
MIDA	Malaysian Investment Development Authority
MIT	Massachusetts Institute of Technology
MITI	Ministry of International Trade and Industry
MOH	Ministry of Health
MOSTI	Ministry of Science, Technology and Innovation Malaysia
MoU	Memorandum of Understanding
MP	Member of Parliament
MREE	Middle or medium REE
MTR	Mid-term review (of Malaysia's 5-year development plans)
NADMA	National Disaster Management Agency

NASA	National Aeronautics and Space Administration (United States)
NEP	New Economic Policy
NGO	Non-governmental organisation
NKRA	National Key Result Area
NRE	Ministry of Natural Resources and Environment Malaysia
NSC	National Security Council
NUF	Neutralisation Underflow Residue
OECD	Organisation for Economic Co-operation and Development
OHCHR	United Nations Office of the High Commissioner for Human Rights
OSA	Official Secrets Act 1972
P10	Principle 10 of the Rio Declaration on Environment and Development
PARC	Perak Anti-Radioactive Committee
PAS	*Parti Islam SeMalaysia* (Pan-Malaysian Islamic Party)
PEIA	Preliminary Environmental Impact Assessment
PEMANDU	Performance Management and Delivery Unit, Prime Minister's Office
PKNP	Pahang State Development Corporation
PM	Prime Minister
PNMB	*Percetakan Nasional Malaysia Berhad* (the official printer appointed by Government of Malaysia)
PPD	Public participation in environmental decision-making
PPPA	Printing Presses and Publications Act 1984
PRTR	Pollutant Release and Transfer Register
PS	Pioneer Status
PSC	Parliamentary Select Committee
PTP	Political Transformation Programme
QRA	Quantitative Risk Assessment
RE	Rare Earths

REEs	Rare Earth Elements
RELA	*Jabatan Sukarelawan Malaysia* (The People's Volunteer Corps)
REMs	Rare Earth Metals
RIA	Radiological Impact Assessment
RSA	Radioactive Substances Act 1968
SA	Sedition Act 1948 (Revised 1969)
SAM	*Sahabat Alam Malaysia* (member of Friends of the Earth International)
SEDA	Sustainable Energy Development Authority (Malaysia)
SEHN	Harvard Law School's Science and Environmental Health Network
SMSL	Save Malaysia Stop Lynas
STP	Social Transformation Programme
TAI	The Access Initiative
TCKs	Third Culture Kids
TCPA	Town and Country Planning Act 1976
ThO2	Thorium dioxide
TKIA	Teluk Kalong Industrial Area
TMI	The Malaysian Insider
TOL	Temporary operating license
TOR	Terms of Reference
TWN	Third World Network
UK	United Kingdom
UMNO	United Malays National Organisation
UN	United Nations
UN DESA	United Nations' Department of Economic and Social Affairs
UNCED	United Nations Conference on Environment and Development (also known as the Earth Summit) 1992
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe

UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic and Social Commission on Asia and the Pacific
UNFCCC	United Nations Framework Convention on Climate Change 1992
US	United States of America
VIPs	Very Important Persons
WCED	World Commission on Environment and Development 1987
WLP	Water Leach Purification Residue
WRI	World Resources Institute
WTO	World Trade Organization
WWF	World Wildlife Fund (also known as World Wide Fund for Nature)
YB	*Yang Berhormat* (“the Honorable”)

GLOSSARY OF KEY TERMS & NAMES

TERM / NAME	DEFINITION / FULL NAME
Aarhus Convention 1998	The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.
Almaty Guidelines	Almaty Guidelines on Promoting the Application of the Principles of the Aarhus Convention in International Forums.
Article 19 Organisation	Article 19 is an organisation that works to defend the right to freedom of expression. The organisation took its name from the Universal Declaration of Human Rights.
Bali Guidelines	UNEP Guidelines for the Development of National Legislation on Access to Information, Public Participation and Access to Justice in Environmental Matters (2010)
Bernama	A Malaysian news source.
Brundtland Report 1987	“Our Common Future”, the outcome report of the World Commission on Environment and Development 1987.

Democracy	Generally refers to a system of government that is ruled by the people, usually through elected representatives. Key elements of democracy include: 1) separation and balance of power 2) independence of the judiciary 3) a pluralistic system of political parties and organisations 4) respect for the rule of law 5) accountability and transparency 6) free, independent and pluralistic media 7) respect for human and political rights (Meyer-Resende 2011) This term is discussed in Chapter 1.
Environmental Access Rights (also referred to as Principle 10 or Aarhus Convention pillars, and are recognised as core elements of environmental democracy)	1) Access to environmental information, 2) Participation in environmental decision-making, and 3) Access to justice on environmental matters
Environmental citizenship	"Pro-environmental behaviour, in public and in private, driven by a belief in fairness of the distribution of environmental goods, in participation, and in the co-creation of sustainability policy" (Dobson 2010). Further details

	on this term are discussed in Chapter 2.
Facebook, Twitter and Youtube	Corporations that offer online social networking services, generally referred to as social media platforms or simply social media.
Gebeng	A district in Kuantan, Pahang, Malaysia.
Good Environmental Governance	Refer to Chapter 3, which discusses this term and provides the working definition adopted in this thesis.
Good Governance	The concept of good governance may encompass, but should not be limited to: full respect of human rights, the rule of law, effective participation, multi-actor partnerships, political pluralism, transparent and accountable processes and institutions, an efficient and effective public sector, legitimacy, access to knowledge, information and education, political empowerment of people, equity, sustainability, as well as attitudes and values that foster responsibility, solidarity and tolerance (UNESCAP 2009).

Kelantan	A state in Malaysia, located on the east-coast of the country i.e. "*pantai timur*" (meaning "east coast" in Malay)
Kemaman	A district in the state of Terengganu, Malaysia.
Kuala Lumpur	Capital city of Malaysia.
Kuantan	State capital of Pahang, Malaysia.
Lynas Corporation (Lynas Corp / Lynas)	An Australian mining company that mines rare earths and produces rare earth materials.
Lynas Advanced Materials Plant (LAMP)	The rare earth refinery built and owned by Lynas Corporation in the Gebeng Industrial Park, Kuantan in the state of Pahang, Malaysia.
Netizens	A term used to generally refer to online users who participate in various activities on the Internet, much like "citizens" of the Inter***net***.
Principle 10 (of the Rio Declaration on Environment and Development 1992)	"Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the

	environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided".
Rakyat	*Rakyat* is a word from the Malay language (Bahasa Melayu) meaning "the people" or "citizens". Further details are provided in Chapter 3.
Rare Earth Elements	A group of seventeen chemically similar metallic elements, including the fifteen lanthanoids or lanthanides (with atomic numbers of 57 to 71), plus scandium and yttrium.
Sahabat Alam Malaysia	A Malaysian environmental NGO that is a member of the Friends of the Earth International, an international environmental NGO.

Stockholm Declaration	1972 Declaration of the United Nations Conference on the Human Environment.
Sustainable Development / Sustainability	"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987).
The public	"One or more natural or legal persons and their associations, organizations or groups" (UNEP 2011).
The public concerned	"The public affected or likely to be affected by, or having an interest in, the environmental decision-making" (UNEP 2011).
Vision 2020 (*Wawasan 2020)*	Malaysia's long-term goal of becoming a developed, high-income nation that is sustainable and inclusive by year 2020.
Yang Berhormat (YB)	A term in the Malay language meaning "the Honorable" that is used to refer to a Member of Parliament (MP).

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION & PROBLEM STATEMENT

1.1.1. *Environmental issues and challenges*

Through multiple studies, observations, and rigorous scientific research conducted around the world, the latest consensus on global climate change points to **human activities** as the primary driver (The National Academies of Sciences Engineering and Medicine 2005; Intergovernmental Panel on Climate Change (IPCC) 2007; American Association for the Advancement of Science 2009; Cook et al. 2013; IPCC 2014; NASA 2016)[1]. The United Nations Development Programme (UNDP) Report to the Secretary-General entitled *Realizing the Future We Want for All* (2012), stresses that increased levels of human activity are "threatening to surpass the Earth's carrying capacity as a source and sink" (p. 16)[2]. In turn, environmental degradation that is produced as a result of such human activities can lead to grave humanitarian problems such as poverty and war, as it augments the vulnerability of societies, contributes to the scarcity of resources, and is one of the many root causes of tensions and

[1] A list of worldwide scientific organizations that hold the position of human action being the main cause of climate change can be referred to through the following link: <https://www.opr.ca.gov/s_listoforganizations.php> (State of California 2011) [Accessed 30 January 2016].

[2] The report also explains that the growth of population, income, energy and resource use, waste and pollution have arrived at the cost of unprecedented use of natural resources and environmental degradation: "Almost half of the Earth's forests are gone, groundwater sources and fish stocks are being rapidly depleted, and land degradation and ocean acidification are worsening. Biodiversity has been enormously reduced, and carbon dioxide emissions increased by 40 per cent between 1990 and 2008" (UNDP 2012, p. 16).

conflict (International Committee of the Red Cross (ICRC) 2007). According to the UNDP (2012), incidence of natural disasters has increased five-fold since the 1970s, and environmental degradation caused by deforestation and poor infrastructure, for example, has "increased the likelihood that weather shocks will cause human disasters, especially for the poorest and most vulnerable" (p. 17).

In seeking solutions to address and mitigate local and global environmental challenges, much effort has been carried out at national and international levels. For instance, the Global Environment Outlook 5 (GEO5) Report (United Nations Environment Programme (UNEP) 2012a) explains that "[o]ver the past 40 years a wide range of responses to environmental problems has been implemented as a set of interacting systems with multiple actors at different scales" (p. 461). Nevertheless, **many nations around the world continue to face challenges in addressing environmental issues caused by human activities**, and still struggle in effectively implementing environmental laws and policies (Vidal 2012). De Oliveira (2008) opines that **the situation is made worse in developing countries** where "Governments usually fail to implement environmental policies because key implementing agencies lack political support, financial resources, institutional capacity, and coordination at the local level" (p. 2).

1.1.2. *The importance of ("good") environmental governance*

While some literature has emphasised the roles of technology and the market in tackling environmental issues and achieving sustainable development[3] (Delgado & Strand 2010, p. 144; de Oliveira 2008, p. 20), there has been growing recognition of the importance of environmental governance[4] as well. According to the United Nations Environment Programme (UNEP), "Environmental governance at the national, regional and global levels is critical for the achievement of environmental sustainability and ultimately sustainable development" (UNEP 2012b). Indeed, a Note by the Executive Director of UNEP to the Consultative Group of Ministers or High-level Representatives on International Environmental Governance in 2009 reports that **the terms environmental governance and sustainable development have been used interchangeably** in the United Nations system (UNEP Executive Director 2009, p. 3). The Executive Director describes the significance of the **environmental**

[3] Chaired by Gro Harlem Brundtland, the World Commission on Environment and Development in its 1987 report (Our Common Future) defined sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (1987, p. 8). Known as the "Brundtland definition", it has since been open to various interpretations, but remains the global standard. Nevertheless, there is currently no universally accepted definition of sustainable development. Thus, for the purpose of clarifying the use of the term "sustainable development" and "sustainability" (which will be used synonymously) throughout this paper, the research will adopt the Brundtland definition as a foundation but shall continue to explore the meaning behind the term within the Malaysian context. The research recognises the current stance of Malaysia on sustainable development that is in parallel with the South's views on the importance of balancing all three pillars that are environmental, social, and economic sustainability. The research also acknowledges that the meaning of sustainable development for Malaysia may evolve as the rapidly developing country continues to search for means of protecting the environment while reaping economic value. As stated in the Brundtland Report, "in the end, sustainable development is not a fixed state of harmony, but rather a process of change…We do not pretend that the process is easy or straightforward" (1987, p. 9). A brief chronology that summarizes the development of the term in the Malaysian context will be elaborated in Chapter 4.

[4] There are multiple ways to define and describe the term "environmental governance". The United Nations Environment Programme (UNEP) provides a succinct definition, which is that environmental governance "comprises the rules, practices, policies and institutions that shape how humans interact with the environment" (Huong 2009).

pillar as a foundation in the concept of sustainable development by stating that "[t]he concept of three interdependent and mutually reinforcing pillars of sustainable development […] should not be visualised as three vertical pillars standing side by side. Rather than being a parallel pillar, the environment pillar needs to be viewed as a horizontal pillar that provides the foundation for the economic and social pillars of sustainable development, because life on earth is conditioned upon a healthy environment" (p. 3). The author would argue that as greater importance is placed on the environment pillar towards achieving sustainable development, it then becomes increasingly essential for environmental governance to be further improved in order for it to be more effectively implemented. Former Under-Secretary-General of the United Nations Department of Economic and Social Affairs (UN DESA), Sha Zukang, also similarly mentioned that "strong governance structure is critical for advancing sustainable development" and that a "coherent, coordinated institutional framework for sustainable development…can greatly contribute to reaching development goals and addressing emerging challenges" (2011). In addition, Adger and Jordan (2009) insist that "the crisis of unsustainability is, first and foremost, a crisis of *governance*" (p. xvii), lending support to calls for adopting institutional frameworks and measures that could contribute to advancing environmental governance.

Regrettably, UNEP (Huong 2009) finds that "[c]urrent environmental governance arrangements are inadequate and have led to continued degradation of the environment". In parallel, the United Nations Committee for Development

Policy (2012) notes that there have also been inadequacies of governance in responding to the voices of people, which have become "increasingly apparent with popular manifestations demanding fair, participatory and democratic approaches", highlighting that despite overall improvement in living standards, the increasing gaps in opportunities among population groups can nonetheless lead to political and social instability (p. 15). Indeed, heightened demands for good governance[5] and democracy[6] have been witnessed through instances of major civil unrest, which have occurred in some parts of the world in recent years[7]. The author, therefore, decided to adopt the concept of "good" environmental governance to serve as a normative foundation for this research topic and direction[8], i.e. a sort of guideline and point of reference upon which best practices could be explored and possibly developed.

[5] The term "good governance" and its characteristics will be further elaborated in Chapter 3.

[6] The Oxford Dictionaries defines democracy as "a system of government by the whole population or all the eligible members of a state, typically through elected representatives" (Oxford Dictionaries 2013). This definition is acceptable but nevertheless appears to be extremely simplistic as the author is aware that there are various other definitions for this term as well as existing debates on different forms of democracy. Therefore, to avoid overcomplicating the understanding of this term in this research, the author refers to the key elements of democracy as stated in a report prepared by Democracy Reporting International (Meyer-Resende 2011). The report explains that "democracy is not an *anything goes* form of government. Various internationally agreed documents include an outline of the core components of what democracy means. A range of them are 'hard' legally binding international law. Others may be considered soft law. While these documents do not give an exhaustive definition of democracy, they include basic key elements, each of which is a necessary condition for a democratic form of governance" (Meyer-Resende 2011). The key elements of democracy listed are 1) separation and balance of power 2) independence of the judiciary 3) a pluralistic system of political parties and organisations 4) respect for the rule of law 5) accountability and transparency 6) free, independent and pluralistic media 7) respect for human and political rights; e.g., freedoms of association and expression; the right to vote and to stand in elections.

[7] At the time of writing in October 2012, such as the Arab Spring, which was a revolutionary movement of protests and demonstrations against dictatorships that began in 2010 in the Arab World (The Economist 2012). Civil unrest in other parts of the world were also a result of the food, fuel, and financial crises or "triple threat", which was the combination of the rise in food prices, fuel costs, and global financial turmoil that began in 2008, and made worse by unfavourable weather conditions caused by climate change. The situation was described by World Bank President Robert B. Zoellick as a "human crisis" (The World Bank 2008; The World Bank 2009).

[8] The normative status of the term "good environmental governance" will be further explored and discussed in Chapter 3 of this thesis.

UNEP states that "[g]ood environmental governance takes into account the role of all actors that impact the environment" (Huong 2009), signifying the essential need for the problem-solving of environmental issues to extend beyond the realm of government (i.e. to involve businesses, civil society, individual members of the public, etc.) and beyond law (i.e. politics, sociology, technology, ethics, etc.). In conducting research on some of the numerous definitions, characteristics and interpretations of this concept, which will be further elaborated in Chapter 3, the author believes that advancing "good" (and/or "effective")[9] environmental governance would require **transparent, participatory and democratic approaches**[10]. Such approaches to environmental matters have been linked to Principle 10 of the Rio Declaration on Environment and Development, which was adopted in 1992, reaffirmed in the Rio+20 outcome document in 2012 (United Nations (UN) 2012b), pursued further through the Bali Guidelines (United Nations Environment Programme 2011), explored in various countries under The Access Initiative (TAI 2012), and eventually led to the introduction of the Principle 10 Implementation Guide (UNEP 2015a).

[9] To avoid confusion of the various meanings between the two terms, "good environmental governance" and "effective environmental governance" will be used synonymously in this thesis, as literature thus far have also used both terms interchangeably.

[10] As there is no single universal definition for the term "good (and/or effective) environmental governance", the author will explore some of the models and interpretations of this concept in Chapter 3, and adopt a working definition for the purpose of this research.

1.1.3. *Promotion of environmental access rights under Principle 10*

Principle 10 (Rio Declaration on Environment and Development)

"Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided" (UNEP 1992).

Principle 10 (or P10) is one of the twenty-seven principles of the 1992 Rio Declaration on Environment and Development (Rio Declaration), which is considered a non-binding[11] multilateral agreement, or soft law instrument, that was signed by over 170 countries, including Malaysia. The Principle begins by stating, **"Environmental issues are best handled with participation of all concerned citizens, at the relevant level",** and calls on Governments to provide citizens with rights that encompass **1. access to information, 2. participation in decision-making, and 3. access to justice, on**

[11] The term "non-binding" in law generally refers to "having no legal or binding force" (Merriam-Webster 2015) and also "not legally necessary to obey or follow" (Cambridge University Press 2016). In the context of this research, references made to non-binding international environmental agreements refer to documents that are not treaties. That said, the author will analyse this further in her discussion on the legal status of Principle 10 in Chapter 3.

environmental matters. These three "pillars" are fundamental in promoting transparent, inclusive and accountable environmental governance[12] (UNEP 2015b). Collectively, they can be referred to as **"environmental access rights"** and are recognised as key principles of environmental democracy (Foti et al. 2008). Principle 10 has also been elaborated through the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (**Aarhus Convention**), which was promulgated by the United Nations Economic Commission for Europe (UNECE) in 2001, leading to the formulation and implementation of laws that grant citizens of member states with environmental access rights (UNECE 1998).

As a multilateral treaty, the Aarhus Convention is legally binding on the States that have become parties to it, whereas Principle 10 does not carry the same legal clout. However, although the Rio Declaration may be generally perceived as a "non-binding" agreement, some of its principles have been adopted as part of laws (as in the case of Principle 10 to the Aarhus Convention, and Principle 17 to national laws on Environmental Impact Assessments). A 1997 report of the Secretary-General on the application and implementation of the Rio Declaration finds that "[t]he legal status of each of the principles varies considerably. Some are firmly established in international law, while others are only in the process of gaining acceptance. Some principles appear in global or regionally binding instruments, while others can only be identified in soft-law instruments. It is difficult in many cases to establish the parameters or the precise legal status of each principle" (United Nations Commission on

[12] Principle 10 and its pillars will be discussed further in Chapter 3.

Sustainable Development 1997, p. 17). Nevertheless, some might still argue that Principle 10 could be regarded as part of customary international law, given its growing prominence in international instruments directed at ensuring environmental access rights[13] at national level, such as in Agenda 21 and Pollutant Release and Transfer Registers (PRTRs). Therefore, although the Rio Declaration is regarded as a non-binding agreement, arguments can still be made on the legal status of Principle 10 as it could have a largely normative effect in directing the behavior and decisions of States, policy-makers and civil society. This discussion will be further explored later in Chapter 3.

1.1.4. *The case of Malaysia*

As a developing country that has undergone rapid changes, Malaysia is no exception in the struggle to achieve balance between the economic, social, and environmental components of development (United Nations Department of Economic and Social Affairs (UN DESA) 2012, p. 135; Yeoh 2015). The country continues to face mounting environmental challenges, such as deforestation, haze, water pollution, and poor waste management (Global Environment Centre 2002; Tan 2014; Blakkarly 2015; Murdoch 2015; WWF-Malaysia 2015). Furthermore, **the Malaysian society is experiencing a transition** in various aspects, such as education, income, politics, culture, identity, and modes of communication as well as expression, which have been made further complex

[13] The term "Environmental access rights" in this research refers to the three pillars of Principle 10, which will be explained further in Chapter 3.

with the advent of new technologies and Internet penetration across the country (Author's observation as a Malaysian; Hill et al. 2012).

Malaysia's last General Elections of 2008 and 2013, for example, appear to have shown indications that the **Malaysian public is increasingly demanding more transparency, inclusivity and accountability from the Government**[14], expressed by groups of protestors on the streets and by netizens online. These general socio-political changes have arguably influenced the ways in which Malaysians obtain information on and respond to environmental issues as well, as witnessed during the Rare Earth Controversy that occurred in Gebeng, Kuantan[15] (Associated Press 2012b).

Through Vision 2020 and several progressive policies such as the National Policy on the Environment and the Climate Change Policy[16], the Government of Malaysia has made some efforts in placing environmental protection and conservation on the national agenda. Yet, **governing environmental issues in the country remains an arduous task due in part to the priority that is arguably placed on economic progress,** which the country appears to significantly depend on in its strive to achieve developed, high-income-nation status by year 2020 (Kok 2015).

[14] According to Nur Barizah Abu Bakar and Zakiah Saleh (2011), the 2008 Malaysian General Election produced an unprecedented result which has allowed, for the first time in the history of Malaysian politics, the Opposition coalition to capture five (out of thirteen) key states in the Malaysian Peninsula to form the State Governments and ten out of eleven parliamentary constituencies in Kuala Lumpur: "Political analysts and observers locally and globally have attributed this swing in votes partly to the public call for change toward a more transparent and accountable government by having a stronger opposition in the Malaysian democratic process" (p. 133-134).

[15] More of which the author will discuss later in Chapter 6.

[16] The author will explain in detail what Vision 2020 and the abovementioned policies are in Chapter 4.

There are also various other challenges involved in ensuring effective implementation of environmental laws and policies in the country (Sahabat Alam Malaysia 2004, p. 158). Overlapping these challenges are the restrictions that have been placed on access to environmental information and public participation in environmental decision-making[17].

The Environmental Democracy Index (EDI), which was developed and introduced by The Access Initiative (TAI) in 2015, **ranks Malaysia at 69 out of all 70 countries (i.e. second to last)** that are listed in the index (World Resources Institute & The Access Initiative 2015). This further demonstrates that **deficits in access to information and public participation in environmental matters are still present in Malaysia**, **and may be hindering the development of good environmental governance in the country, which could arguably impede Malaysia's efforts towards achieving sustainable development under Vision 2020**.

The finding emphasised in the box above provides a good basis for the advancement of the research aims stated in this thesis.

[17] These restrictions will be discussed in Chapters 4 and 5.

1.2 RESEARCH AIM & SCOPE

The overarching aim of this research is to explore public access to environmental information and participation in environmental decision-making within the context of Malaysia, a developing country in transition. This research was carried out under the Sustainable Transitions research group at Imperial College London's Centre for Environmental Policy and is guided by key questions that seek to **examine the extent of access to environmental information in Malaysia, and opportunities for participation that are made available to the Malaysian public in environmental decision-making processes.** The scope of the research will be **limited to Peninsula Malaysia, and at the Federal level** of law, policy, and implementation.

To further inform the research, examples on the state of access (or lack thereof) in Malaysia will be analysed through a focused investigation on the Rare Earth Controversy in Kuantan, and on the Major Floods of 2014/2015 that occurred in Malaysia (with first-hand observations made in Kelantan and the lessons learnt from the flood preparation model of Kemaman). Any deficits that might exist in the current system of access in Malaysia, compared to the best practices that were particularly expressed by Principle 10 and the Aarhus Convention, will thus be identified through this research. **The outcome of this research are recommendations that the author will present in the form of a conceptual policy-based framework, tailor-made specifically for Malaysia, that is intended to enhance public access to environmental information and**

participation in environmental decision-making, with the hope that it will ultimately contribute to the country's progress towards achieving its sustainability goals under Vision 2020 and beyond.

Through fulfilling its aim and objectives, **the research may be able to fill the lacuna in the current body of knowledge concerning environmental governance and environmental access rights,** which is hoped to be useful to other developing countries as well as to developed countries that might still be encountering difficulties in their already-established models for access.

1.3 RESEARCH QUESTIONS & OBJECTIVES

The central question posed in this research is:

How are the public in Malaysia provided with access to environmental information and opportunities to participate in environmental decision-making?

This main question can be broken down into three key questions, which are:

1) *To what extent is access to environmental information and public participation in environmental decision-making made available to the public in Malaysia?*

2) *What lessons can be learnt from the two units of analysis in the embedded case study regarding the constraints (if any) experienced by the Malaysian Government in providing, and by the public in obtaining, access to environmental information and participation in environmental decision-making processes?*
3) *How can Malaysia improve public access to environmental information and participation in environmental decision-making?*

The objectives of this research are listed in Table 1, in the following pages. To help guide the direction of research, more specific sub-questions along with the purpose and general methodology have been aligned to each research objective.

Table 1: RESEARCH OBJECTIVES

NO.	OBJECTIVES	SUB-QUESTIONS	PURPOSE	METHODOLOGY
1.	Conduct a comprehensive literature search on good (and/or effective) environmental governance, with special focus on access to environmental information (EI) and public participation in environmental decision-making (PPD)	a. What are the characteristics of good (or effective) environmental governance? b. What is access to EI and PPD and why is it important? c. How can access to EI and PPD contribute to fostering good environmental governance?	To gain information on what good environmental governance should entail. To obtain a deeper understanding of access to EI and PPD and how it may help to promote the development of good environmental governance.	Secondary research: Books, reports, journal articles, newspapers, and various online sources of information.
2.	Examine Malaysia's laws and policies related to EI and PPD.	a. What is the legal framework for the environment in Malaysia? b. Do laws and policies on environment in Malaysia contain any provisions or statements that could lend support to access to EI and PPD in Malaysia? c. What are some existing laws or policies in Malaysia that may arguably clash with access to EI and PPD?	To investigate whether Malaysia provides any form of access to EI and PPD and to identify any laws or policies that might pose challenges towards implementing access to EI and PPD.	Secondary research: Constitution of Malaysia, environmental legislation, books, journal articles, policy documents, Government reports, and official websites.

3.	Investigate and analyse potential access to EI and PPD made available to citizens in Malaysia at Federal level, specifically in the case of the Rare Earth Controversy in Kuantan, and the major floods of 2014/2015.	a. Where can the public in Malaysia obtain information on the environment? b. How can the public in Malaysia participate in environmental decision-making processes? c. What insights can be obtained from the case study's two units of analysis concerning access to EI and PPD in Malaysia? d. What are the deficits that appear to exist in access to EI & PPD in Malaysia?	To find out how environmental information is made available to the public in Malaysia, and which venues or procedures they are given the opportunity to participate in the decision-making process. To discover what happened in the case study and gain perceptions from the actors involved as to how and why the issue was raised in such scale and manner.	Secondary research: Local and international media coverage online and in print, Lynas statements and reports, Government statements and reports, NGO statements and reports, online videos and radio interviews. Primary research: Interviews with representatives of relevant Government agencies, Lynas Corp, and selected NGOs, and a survey administered online to Malaysian netizens.
4.	Provide recommendations and suggestions based on research findings and lessons learnt from the case study.	a. What are some suggested improvements that could be introduced to help enhance EI & PPD in Malaysia?	To suggest solutions that may help in enhancing access to EI and PPD in Malaysia.	Analysis of research findings
5.	Devise a strategic, policy-based framework for access to EI & PPD in Malaysia.	a. What would a framework for EI and PPD in the context of Malaysia look like?	To propose a framework for access to EI and PPD that would be specifically designed to fit into the Malaysian context.	Analysis of research findings

1.4 CHAPTER SUMMARY

This chapter has provided an introduction to the research topic and body of work that will be presented, discussed and analysed in this thesis. The author has stated the problem and the potential path towards improvement that will be explored, briefly introduced the key concepts that form the foundation of the research topic, provided a brief background on Malaysia as the case study of the research focus, and explained the aim as well as stated the questions and objectives that guide the direction of this research study. The author considers this research unique in its approach to addressing environmental concerns in Malaysia as it emphasises the importance of access to information and public participation in resolving environmental issues. This research will attempt to resurface and mainstream the discussion surrounding the fundamental need for the Government of Malaysia to not only provide, but also actively disseminate information that Malaysian citizens will be able to comprehend regarding their environment, and alert them to the opportunities of participating in decisions that may have a significant impact on their environmental surroundings.

In the next chapter, the author will explain the methodologies that were employed in this research, including the research design, approach, data collection modes and phases, theoretical framework as well as the limitations that were encountered during the research process.

CHAPTER 2

METHODOLOGY

2.1 INTRODUCTION

This chapter will explain the methodologies that were adopted in this research to obtain various forms of information and evidence relevant to the author's exploration of the research topic. The author will explain the research design and the case study approach as well as the criteria that were used to select the case study. The methods for data collection and **the research strategy staircase** that the author created and used as guidance will also be described in this chapter. The author will then share the limitations that were encountered in collecting data and obtaining other relevant information while conducting this research study. Finally, the theoretical framework of the research will be explained through a brief overview of the key theories that have inspired this research direction and contributed to the development of a policy-based framework that the author will present later in this thesis.

2.2 RESEARCH DESIGN

This empirical research lends itself to a **predominantly qualitative and exploratory mode of inquiry**. The research process commenced in an inductive manner, and was later intermixed with deductive steps upon emergence of key concepts and themes related to the topic. These were

identified through the process of collecting and analysing data and evidence, as well as the development and re-examination of the literature review.

Sue & Ritter (2012) states that "[t]he goal of exploratory research is to formulate problems, clarify concepts, and form hypotheses…Exploratory research typically seeks to create hypotheses rather than test them" (p. 2). Indeed, this research does not intend to prove a preconceived theory or hypothesis, hence a more flexible approach was adopted to allow for initial exploration of the main concepts linked to the topic of interest, and consideration of the concepts (in theory and in practice) to the Malaysian context. By adopting this approach, the author was able to gain valuable insights into the general ideas, forms and practices of good environmental governance, which led the author to inquire further into its key principles, and ultimately the critical decision to delve deeper into exploring environmental access rights. As Bhattacherjee (2012) explains, "Exploratory research is often conducted in new areas of inquiry, where the goals of the research are: (1) to scope out the magnitude or extent of a particular phenomenon, problem, or behavior, (2) to generate some initial ideas (or 'hunches') about that phenomenon, or (3) to test the feasibility of undertaking a more extensive study regarding that phenomenon" (p. 6).

While the research is predominantly exploratory in nature, it has also adopted some features of an explanatory research, which is an approach that "seeks explanations of observed phenomena, problems, or behaviors" (Bhattacherjee 2012, p. 6). The **exploratory** and **explanatory** methods were combined in the embedded case study's two units of analysis in this research, as the author sought to not only gain an understanding of what had happened

in the situations that occurred in each unit of analysis, but to provide and discuss several reasons why the situations may have occurred the way they did, in relation to the research topic.

2.3 CASE STUDY APPROACH

Yin (2009) describes a case study as “an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (p. 18). Four types of case study designs are identified by Yin, as displayed in Figure 1.

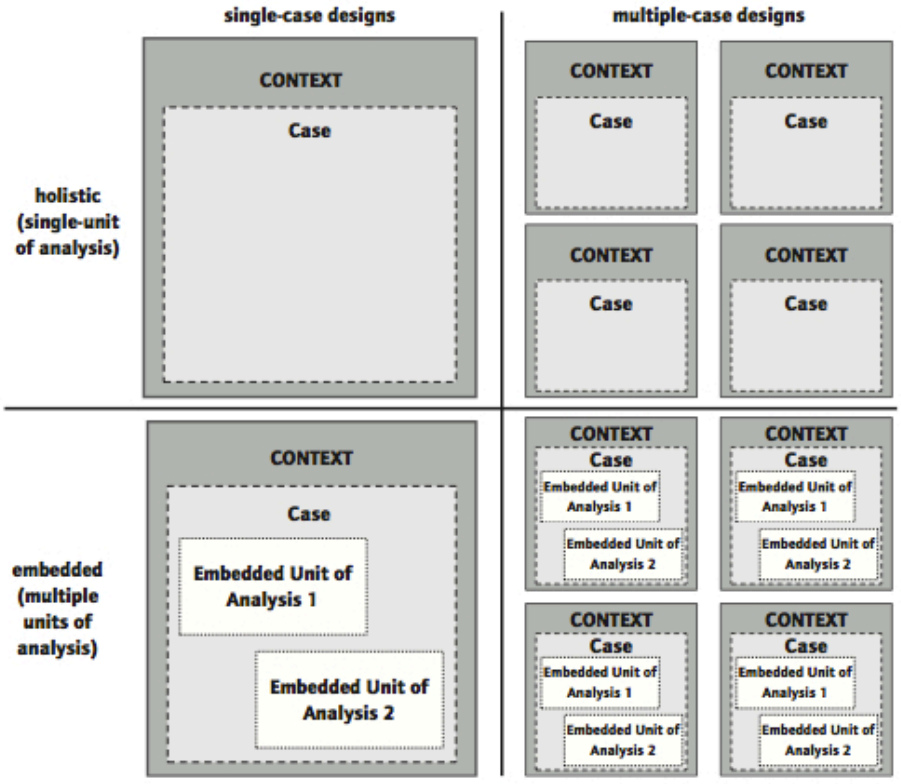


Figure 1: Basic Types of Designs for Case Studies (Yin 2009)

This research adopted an **embedded single-case study**[18] **design**, in which **Malaysia was positioned as the focus of the case study** while further observations and detailed investigation was conducted on **specific sets of events, or embedded units of analysis**, in order to draw out some evidence and examples. Figure 2 displays the selected case study design within the context of the research topic:

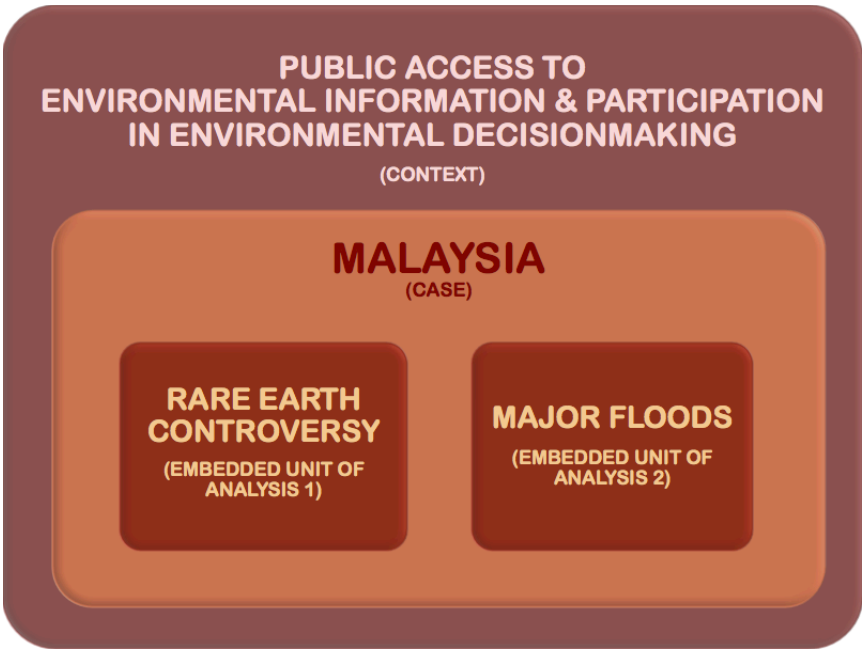


Figure 2: The Embedded Single-Case Study design adopted in this research.

There are several rationales for conducting single-case studies. **The rationale behind the case study of this research is that it represents a "*revelatory case*".** According to Yin (2009), "[t]his situation exists when an investigator has an opportunity to observe and analyze a phenomenon previously inaccessible to social science inquiry" (p. 48). Hence, as Yin asserts, "[t]he case study is therefore worth conducting because the

[18] A single case study that involves more than one unit of analysis is referred by Yin (2009) as embedded case studies, which "occurs when, within a single case, attention is also given to a subunit or subunits" (p. 49).

descriptive information alone will be revelatory" (p. 49). The selected case study offers a unique opportunity to observe and analyse rare and recent events that have occurred in Malaysia while the country is in its critical phase of transition. **This research, therefore, was conducted at a time when landmark events were taking place in the history of the country, which few researchers have had a chance to investigate.**

The author considers the case of the **Rare Earth Controversy in Kuantan as one of these landmark events** because from her experience as a Malaysian, major protests that centre on the environment are rarely witnessed in the country, and are not usually expected to cause Government authorities to take immediate action in resolving the issue. In the situation of the Rare Earth Controversy in Kuantan, the Government was clearly pressured to address public concern, and the group demonstrations appeared to have also attracted a substantial number of protesters. Meanwhile, the case of the **Major Floods of 2014/2015, which the author was able to witness firsthand in Kelantan, is also considered a landmark event** because it took place on such an unexpected scale, and the result of it allowed the author to obtain an extraordinary glimpse into how the people and the Government responded to the situation. The details of these events will be further elaborated later in this thesis.

Below, the author provides a brief list of the criteria upon which the case study of Malaysia was selected for this research:

1. **Relevance** – the case study of this research contains elements that address environmental governance issues, specifically the three pillars of environmental access rights, two of which have been selected as the main focus of the research. The case study of Malaysia as a country in transition also fits into the theme of the Sustainable Transitions research group at the Centre for Environmental Policy, where this research commenced and culminated.

2. **Location** – the research takes place in Malaysia, a developing country that had expressed intentions of transforming Government and society, while seeking to transition into becoming a developed, high-income nation that is inclusive and sustainable.

3. **Timing & Opportunity** – the research occurs at an opportune moment when the focus of the case study country is implementing transformation programmes and undergoing changes in leadership. For example, the 2013 General Elections that occurred at the time the case study was being investigated presents an opportunity to observe how the historical event may have influenced the issues addressed in the research.

4. **Availability of data** – the situations that occurred in the case study's selected units of analysis is recent, and would thus be more convenient for the purpose of collecting up-to-date information, contacting key actors for interviews, and visiting relevant locations for direct observation and participation.

5. **Uniqueness** – academic research and writing on the topic of public access to environmental information and participation in decision-making in Malaysia have been sparsely addressed or too biased to date. The author detected this after experiencing difficulties in obtaining Malaysian literature on this specific subject area. It appears to remain a discussion that is yet to be mainstreamed in the country, as news sources reporting on the environment rarely discuss the environmental issues in relation to access to information or public participation, even though there are organisations such as the Centre for Independent Journalism (CIJ) that strive for access to information[19]. In addition, it was observed that at the very initial stage of research, the Government of Malaysia had only just begun to move towards a citizen-centric approach to governance. Street protests and online criticisms of the Government, therefore, are forms of public expression that the Malaysian Government still struggles to manage (Koswanage & Grudgings 2012; Gooch 2012). The case study's units of analysis also revolve around a set of events that are yet to be thoroughly analysed and discussed through research at PhD level. Hence, the exploration of

[19] To know more about the advocacy work of the CIJ, the organisation's website can be referred to through following link: <http://cijmalaysia.org/> (CIJ 2012) [Accessed 16 November 2012].

the case study in the context of the research topic can be considered novel.

6. **Personal interest** – As a Malaysian citizen, the author is personally concerned and curious about the issues addressed in the case study and the effects they will have on Malaysia's environment, citizens, and development goals. The author hopes to gain valuable insights into the case study in order to propose recommendations and a framework that could be useful in fostering improved public access to environmental information and participation in environmental decision-making. The author also holds an interest in pursuing a career in the field of sustainable development, particularly in areas where environmental governance and environmental access rights are concerned, and thus seeks to gain a deeper understanding of the subject area. While the research findings may be more focused on Malaysia, the author believes the skills and knowledge gained from conducting research in the areas of study covered under the research topic are invaluable, and could indeed be instrumental to enhancing the author's contribution in the relevant profession.

2.4 DATA COLLECTION

The research data collection was carried out in **three phases** using the method of triangulation to establish validity. Below the author will describe the types of data that were collected in each phase and the methodologies employed in collecting these data. The author will then proceed to explain how the interviews and survey were carried out.

2.4.1. *1st Phase*

The first phase focused on collecting **secondary data**[20], which was conducted in London in the form of desk-based research, to scope out the main issues. This type of data was obtained online and in print, through books, public reports (of academic, civil society, and private entities), journal articles, news sources, official documents and reports (of governments, government-linked agencies, and intergovernmental organisations), legal statutes, videos, radio, podcasts, websites, blogs, as well as various forms of social media such as Facebook, Twitter and Youtube. The first draft of the literature review was composed during this phase, and the body of relevant conceptual and theoretical frameworks were analysed as information was attained. The only form of primary data obtained during this phase was via a brief discussion with a rare earth expert[21] from the Royal School of Mines, Imperial College London.

[20] Details on the specific types of data that were collected and sources of information were indicated in Table 1 of Chapter 1.
[21] Professor Dominik Weiss, who is a professor of Environmental Geochemistry at the Faculty of Engineering, Department of Earth Science & Engineering in Imperial College London.

2.4.2. *2nd Phase*

The second phase focused on obtaining **primary data**. This was carried out partly in Malaysia – specifically Putrajaya, Kuala Lumpur, Pahang, and Kelantan, and partly in London, upon return from Malaysia. The primary data was collected through semi-structured interviews (with individuals and groups), site visits, direct observations, participant-observations, informal conversations, and an online survey. The author gained access to key individuals, locations, and sources through obtaining permission from the Government of Malaysia to be attached at the Ministry of Natural Resources and Environment. The author spent three months in three different departments under the Ministry, which enabled her to not only gain relevant information and contacts, but to also interact and engage with public servants who ranged from senior officials, departmental leaders, administrative heads, and junior officers, to technical experts, librarians and office assistants.

While some of the information from the interaction with the abovementioned groups of public servants may not have contributed to the final composition of this research thesis, the author still considers the interactions valuable during the data collection phase as several of their comments had inspired the author to delve further into certain aspects related to the research topic or case study. Additionally, their willingness to connect and recommend the author to their diverse networks allowed the author to gain access to various other valuable and strategic contacts. In qualitative research, this is referred to as **snowball or chain referral sampling**. According to Biernacki & Waldorf (1981), this method of data collection "yields a study sample through referrals made among people who share or know of

others who possess some characteristics that are of research interest. The method is well suited for a number of research purposes and is particularly applicable when the focus of study is on a sensitive issue, possibly concerning a relatively private matter, and thus requires the knowledge of insiders to locate people for study" (p. 141). **In seeking information from the Government, the author observed that the snowball sampling method proved useful in obtaining participants who were willing to be interviewed**. The attachment to the Ministry permitted the author to meet and speak to a few politicians who held Ministerial positions, and to participate in a few Ministerial events as well as the occasional departmental meetings. These had all contributed to the overall research experience, lessons, and findings.

Due to the initial design and scope of the research, the primary data collection conducted during this phase was concentrated on information pertaining to the Rare Earth Controversy, which is the focus of one of the subunits of analysis in the case study. The only secondary data that was compiled during this phase were official Government documents or reports in hardcopy that were previously unavailable to the author online, and books by Malaysian authors that were not available in the United Kingdom or extremely rare and difficult to obtain in Malaysia.

2.4.3. *3rd Phase*

The third phase of data collection was undertaken during the author's subsequent return to Malaysia. The initial case study design of this research began with one embedded unit of analysis – the Rare Earth Controversy that

originated in Kuantan. However, upon learning of Kemaman's plan to introduce a model for flood preparedness and after considering the annual occurrence of floods in Malaysia, the author decided to adopt a second embedded unit of analysis. Hence, the purpose of the author's trip to Malaysia in this phase was to explore public access to environmental information and participation in times of natural disasters.

During the author's visit, a major turn of events unexpectedly occurred in that the country witnessed the arrival of one of the most serious floods in Malaysian history (Koeck 2014; Bernama 2014i; Azlee 2015). The author was therefore presented with the golden opportunity of conducting first-hand observations on the Major Floods of 2014/2015 in Malaysia and taking notes on the responses of the Government as well as the public. The assistance provided by personal contacts, who either resided in the affected areas or were involved in volunteering to help the victims, enabled the author to directly participate in observing the situation in Kelantan as it occurred through the eyes of the locals. The author also gained special access to areas in Kelantan that were most affected by the floods and, in the process, managed to speak to some of the affected residents as well as Government officials on duty.

Yin (2003) explains that "shifts in the initial plans are examples of the kinds of changes that can occur in the design of a case study", but points out that "a skilled investigator can take advantage of changing opportunities" in order to produce a valued case study (p. 62). The rare opportunity that was presented to the author to gain insights into such an event has contributed to enriching the research findings. The author believes that the original

contribution produced through her report and analysis of the Major Floods as well as supporting information compiled from other sources regarding the same historic event are valuable as they serve a useful purpose for the topic of this research, and for other future research or studies.

2.4.4. *The Interviews*

Prior to conducting the interviews for the first unit of analysis, the author prepared a list of likely candidates to be interviewed and categorised them into groups based on sectors – public, private, academia and non-governmental. This list was prepared based on the author's identification of interviewees that held the relevant posts or roles in relevant organisations that were closely related to the research topic's case study and units of analysis. Examples of these are Government officers and officials from Malaysia's Ministry of Natural Resources and Environment (NRE), Lynas Corporation representatives, experts on rare earths and key representatives of Malaysian environmental NGOs.

The interviews were conducted in person, through Skype, and through e-mail via questionnaire. This was done for practical reasons as the author intended to conduct face-to-face interviews, but due to some of the interviewees' limited time, schedule, location[22] and preference[23], the author offered other alternative modes of communication for interviews, so that valuable opportunities for gaining information relevant to the research topic

[22] For example, when the author had to return to London, and did not get a chance to meet with some of the interviewees in Malaysia, some agreed to participate via Skype.
[23] Some interviewees preferred to meet in person while others much preferred providing written answers through e-mail attachment.

would not be missed. With the exception of the e-mail format, all the other forms of interviews were semi-structured, which allowed the author to inquire further into any particular answers that were provided. This would sometimes lead to open-ended discussions. With the exception of two interviews that lasted thirty to forty minutes, most of the interviews lasted more than one hour.

The author decided not to record the interviews. This was because, as the author realised upon first contact with the potential interviewees, **a significant number of participants displayed hesitance in expressing their opinions and to some extent, doubt, in the author's intentions.** Several of them were also curious to know reasons behind the author's choice to focus on "sensitive" issues, such as the Rare Earth Controversy in Kuantan. Participants who expressed such sentiments hailed from all the abovementioned sectors i.e. public, private, academia and non-governmental, which may **arguably indicate that there could be a general discomfort and cautious behaviour among people in Malaysia with regards to openly discussing certain issues of conflict, or those that are perceived as being in the "sensitive" category of topics**[24]. In response to these interactions and indications, the author chose not to continue offering to record the interviews, as a few participants had already begun to appear awkward when asked, and questioned why the author wanted to record them[25].

[24] These socio-cultural aspects of Malaysian society will be further explored and discussed throughout the chapters of this thesis, with particular focus on culture placed in Chapter 4.

[25] Additionally, the author considered that if offered with the option of being recorded, some participants might agree in order to appear polite, but might then stiffen the conversation and potentially provide answers that they thought the author wanted to hear. Hence, the approach that the author decided to take was to engage participants in a relaxed and friendly environment for the

In the absence of audio recording, the author had to ensure that all relevant information was taken down through other methods. Hence, the author took notes of significant points and statements by using a laptop, occasionally asking participants to repeat any statements that were missed, and oftentimes reviewing what they had said to the author. The author is glad to report that in most of the interviews, the participants appeared relaxed and willing to share their opinions, and did not seem to mind taking time allowing the author to review their statements with them or ask for further clarification. On several occasions, these participants allotted more time to the author than they may have originally intended to, but the extra time often resulted in conversations that proved to be helpful in increasing the author's understanding of the topics covered under the case study.

For the second unit of analysis, the "interviews" were informal and may be regarded as casual or personal conversations. Given the context of the situation (i.e. major floods), it would have been difficult to collect information in a formal interview setting. The information that was collected from these casual interviews, however, should not be dismissed as the author did indeed obtain insightful answers by posing questions while interacting with the people involved. As such, the author considers this mode of collecting information as a mix of direct observation, informal interviews, and participant-observation, which is a "special mode of observation in which you are not merely a passive observer" in that the researcher may "assume a variety of roles within a case study situation and may actually participate in the events being studied" (Yin 2003, p. 93). For the Major Floods of 2014/2015, the author had unpredictably

---

interview (so as not to influence their answers), without offering to record them so as to avoid awkwardness, and to record only if and when the participants themselves requested the author to do so.

managed to become a brief participant in this unit of analysis, as she assumed the role of family relative, volunteer and fellow Malaysian who was present with the locals, experiencing the situation of the floods with them.

According to Yin (2003), “interviews are an essential source of case study evidence because most case studies are about human affairs. These human affairs should be reported and interpreted through the eyes of specific interviewees, and well-informed respondents can provide important insights into a situation” (p. 92). Indeed, the main purpose of the interviews conducted in this “human-centered” research was to obtain supporting information and data that might not be available in literature and other forms of secondary data, but to also gain both structured and open-ended answers and opportunities for discussion that might provide useful insights as well as allow the author to gain clarification directly from the relevant source.

2.4.5. *The Survey*

The survey was launched online and was prepared in the form of questionnaires. The design of the questionnaires was closed, with only a few questions having an open-ended option (e.g. “*Other - please state*”). The survey respondents were anonymous as no names or contact details were requested of them. This was done to convince as many individuals as possible to step forward and participate in the survey. Nevertheless, other personal details such as age group, ethnicity, level of education, and sector of employment were requested from the respondents to capture some demographic data.

A pilot survey was created and administered through “Google Forms”. The link to the survey was sent out through e-mail to the author’s diverse network of Malaysians (i.e. of various age, ethnicity, education, and profession), and included a personalised message, which requested participants to forward the survey to family, friends and colleagues. The author’s network of Malaysians for the pilot survey consisted of friends, family, professional colleagues and their contacts. As mentioned above, these groups of people ranged from various backgrounds such as academics and entrepreneurs, city dwellers and village residents, and Malays and Chinese, but were all assumed to be equipped with the technical knowledge (and internet connection) needed to participate in an online survey. The reason why the author’s somewhat “close-knit” network of Malaysians was selected to test the online pilot survey was because the author wanted to keep the larger list of potential survey participants of Malaysians for the final survey. This was due to the fact that author was concerned that participants who took part in the pilot survey would not be interested in doing a similar version of the survey again.

Hence, in the pilot survey, the author managed to collect only 18 responses. The responses and feedback from the participants led the author to revise some of the questions and design of the survey. The final, revised survey was then launched through SoGoSurvey.com. The survey was disseminated through a wider network of contacts, including those of NGOs, student groups, and Government departments, some of which helped the author to send out the survey to their own list of contacts. This survey was primarily sent out through e-mail invitation, but mobile text apps and social

media networks were also utilised to gain participation from as diverse groups of respondents as possible.

The survey was carried out as an extra effort to obtain more evidence from members of the Malaysian public. The author was aware that the research data collection done in Malaysia would focus more on seeking information from willing representatives of Government authorities, NGOs, and Lynas Corp. Hence, there would be little time for the author to meet and speak with others. The function of the survey, therefore, was to obtain the opinions of a diverse sample of Malaysians, who the author would have been unable to interview due to the constraints in time and travel. **It was disseminated online as the author intended to conveniently reach out to a diverse array of Malaysian respondents, and allow them to answer the questions anonymously, in their own time.** Due to the popular use of blogs and social media by Malaysians, including environmental protestors and other activists, the author was interested in obtaining the opinions of **netizens**, which is another reason why the survey was launched online.

Similar to the planning of the interviews that were carried out during the first trip to Malaysia, the questions posed in the survey (which was also disseminated online during the same trip) had been prepared at an earlier stage of the research whereby the author still held the intention of investigating only one unit of analysis (the Rare Earth Controversy) under the exploration of environmental access rights in Malaysia (i.e. including access

to environmental justice as well[26]). The survey questions, therefore, reflect the original design of the research[27].

Quantitative data was produced as a result of the survey. The sample size that the author intended to reach was 200, but ultimately the total number of responses received was only 32. Some possible reasons could have contributed to this low response rate[28]. As a result, the author did not proceed with analysing the data using statistical software. Instead, the data was analysed manually using Excel. Nevertheless, the author believes that due to the survey's questions, which covered various areas in the initial design of the research, the results of the survey indeed revealed some interesting findings that the author decided to refer to in informing certain parts of the research. **The use of the survey in this research, therefore, functions to provide some supportive evidence or reflection into a particular issue, where relevant.** Nonetheless, one must be reminded that the sample was too small to be applied to the general population of Malaysia, therefore **the survey results are not fully representative**, and should thus be referred to with caution.

2.4.6. *Ethics in Research*

The author intended to honor commonly acknowledged ethical codes, and thus made efforts to ensure that the research process would protect the dignity and confidentiality of the participants that agreed to take part. This

[26] The research was later on scoped down to focus on the first two pillars of environmental access rights in Malaysia due to research limitations such as time and availability of information.
[27] The questions asked in the online survey can be referred to in the Appendix of this thesis.
[28] The possible reasons will be discussed later in this Chapter's section on "Limitations".

research, therefore, complies with the Imperial College Guidelines for Proper Scientific Conduct in Research[29].

Participants who were invited to contribute to the research during the phases of data collection were duly informed of the research topic and the academic intentions held by the author in carrying out the survey and interviews. To obtain informed consent from the participants, the author provided an introductory statement that was displayed at the beginning of the questionnaires in the survey and interviews. The introductory statements can be referred to in the thesis Appendix. All potential participants who were approached for the formal interviews were requested to provide the author permission to meet and speak with them. Some refused the author's request, but among those who agreed to meet with the author and answer questions, all had requested for the questions to be sent prior to meeting the author in person for the interview. In exercising caution, the author decided to maintain anonymity of all participants, except for those who had clearly and expressly provided the author with consent to mention, in this research, their names and current positions, where relevant.

2.5 THE RESEARCH STRATEGY STAIRCASE

During the initial stages of research, the author contemplated on how to conduct the research effectively within the allotted period of time, and thus created **Syafrina's PhD Research Strategy Staircase** (see Figure 3) to

[29] The Imperial College Guidelines (Imperial College London 2016b) can be accessed through the following link: <https://www.imperial.ac.uk/admin-services/secretariat/college-governance/charters-statutes-ordinances-and-regulations/policies-regulations-and-codes-of-practice/proper-scientific-conduct/> [Accessed 20 May 2016].

display the various stages that would lead the author towards achieving the aims and objectives of the research, as well as completing the thesis in time. Several considerations were given to the design of the strategy, such as a flow chart or hierarchical diagram. The author selected the form of a staircase as it reflects a bottom-up approach, which visualizes the progress of a PhD, beginning with exploring a potential “problem” to becoming an expert in the research topic through undergoing various stages of the process. The completion of each stage contributes to the advancement of the PhD candidate towards finishing the whole research, hence the stairs. Although the literature review began in the initial stages, it continues to be revisited and referred to along all the stages of research. The author thus considered it metaphorically as a banister of the staircase that one holds onto in strengthening knowledge of the subject area and in finding supportive arguments to help answer the research questions. The research topic acts as the foundation of the staircase as the author imagined that there would be moments when the author may get lost in all the compiled data or possibly lose her sense of direction in the overall research. The research topic is then what the author would return and refer to if such a situation were to happen, as it provides the bigger picture and reminds the author of the intent and focus of the research. The Research Strategy Staircase is displayed in the next page in Figure 3.

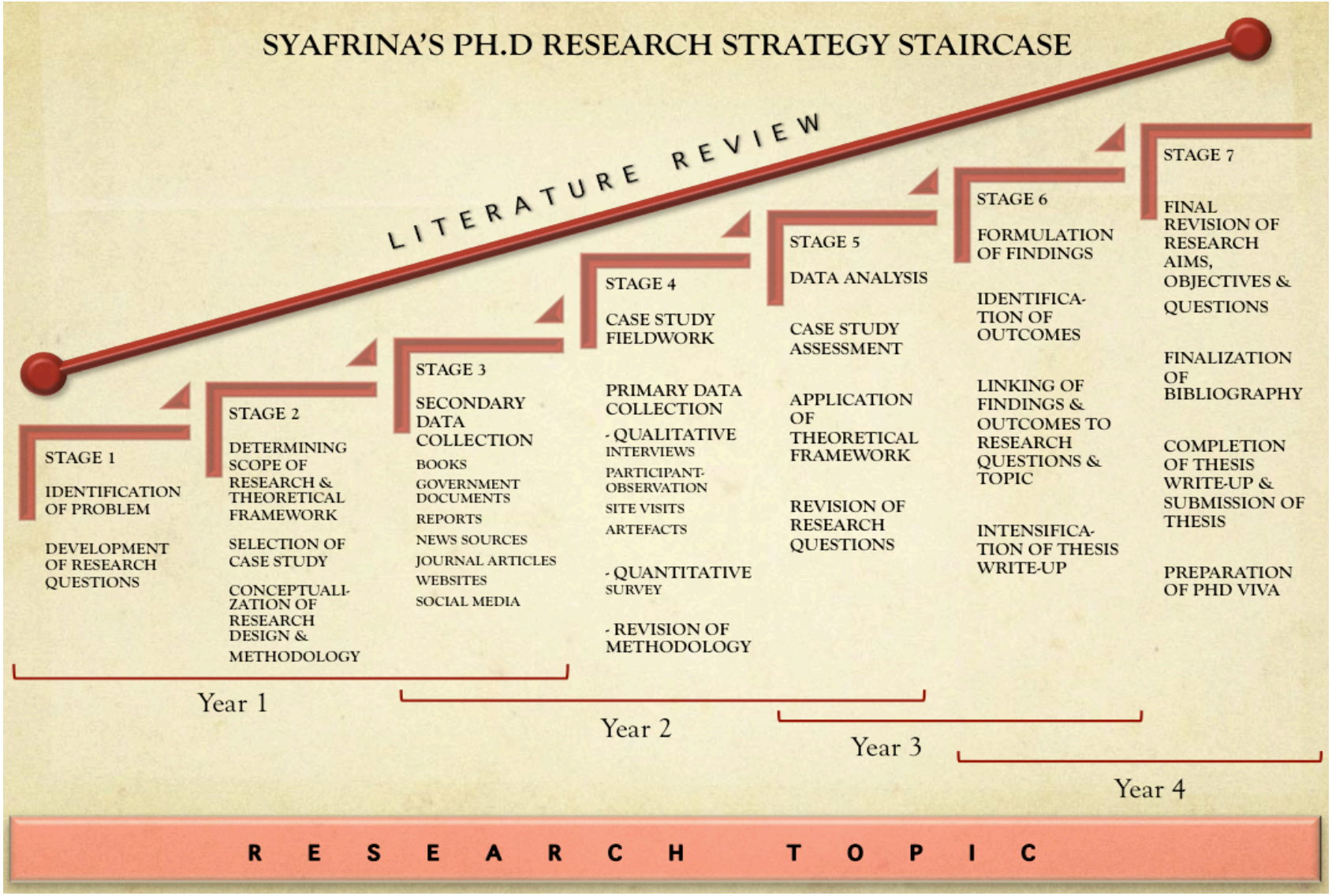


Figure 3: Syafrina's PhD Research Strategy Staircase

2.6 LIMITATIONS

Some limitations were encountered during the research process. The areas of limitations are categorised and elaborated as below:

2.6.1. *Sources of Literature*

While there are literature that discuss the Environmental Impact Assessment (EIA) procedures and implementation in Malaysia, the author discovered that in-depth research focusing specifically on the aspect of public participation in environmental decision-making, access to environmental information, or concepts related to environmental access rights, in the context of Malaysia and its citizens, **have been little explored or overlooked**. **This research could hence contribute towards filling in the gap in knowledge** on this particular area of study. As the topic had been sparsely explored by others, the author encountered some limitations in compiling initial key literature needed to gain a holistic view of the research topic. Some sources of literature published in Southeast Asia were not available in libraries of Imperial College, London, or the United Kingdom (UK). The author could not figure out why this was so, but nevertheless managed to acquire a few of them through the College library's document delivery service, and also during the author's attachment period that was spent at the Malaysian Ministry of Natural Resources and Environment.

2.6.2. *Case Study*

In the initial stages of research, the author had planned to investigate only one embedded unit of analysis – the Rare Earth Controversy that began in Kuantan. However, the Major Floods of 2014/2015 was selected as a second unit of analysis, embedded in the same case study and context of the research topic. Due to the chaotic scenario of the event and the damages caused in communication infrastructure, the author was unable to obtain detailed or structured interviews with many of the key actors in Kelantan, such as local Government representatives, or civil society organisations.

Much of the evidence from the floods in Kelantan were thus derived from first-hand observations and casual interviews that the author managed to document through text, photos and videos (**primary evidence**), which proved to be valuable to the research nonetheless. While the author was able to be in Kelantan to observe the flooding event in person, the author was not able to visit Kemaman. Therefore, the evidence from Kemaman floods were mostly extracted from news reports, social media, blogs, and items provided by the Government, including video footage captured by drones in the aftermath of the floods (**secondary evidence**).

For the Rare Earth Controversy, much of the limitations lied in the fact that it was considered a “sensitive” case. Hence, the author’s attempts to gain opinions on the rare earth refinery, Lynas, or the protests, were met with responses that reflected suspicion and hesitation towards the author. Such display of suspicion and hesitation could have been influenced by lack of trust and openness in

sharing information or personal opinions with “strangers” and **could be indicative of a closed information culture that the society in Malaysia practices**. This was a drawback as the author needed to devote extra time and effort to ensure that the topic was approached in a careful manner, and to gain participants’ trust in the author’s academic intentions.

2.6.3. *Collection of Information*

In attempts to contact and convince representatives of selected organisations (be they public, private or NGO) to agree on participating in the interview sessions, **the author encountered an amount of hesitation, as previously mentioned, which sometimes resulted in direct refusal to participate.** The author had initially tried to approach potential participants by e-mailing them while she was still in London. The author then learned two key lessons on how to obtain participants for interviews in Malaysia:

1. **That it was more effective to introduce herself in person or through telephone as a first step**. Sending out e-mails at initial stages had most likely resulted in no replies. The author would call to introduce herself, engage in professional conversation but speak in a friendly tone to establish an amount of trust, and confirm the e-mail address to which the author should send in an official request for interview. At this point, the author would likely be asked to attach the questionnaires in the e-mail. Most participants responded positively to this approach. Only one

participant requested the author to send the e-mail and questions together with an official letter to prove the author's attachment to Imperial College.

2. **That a more productive method was to obtain recommendations from key contacts or interviewed participants regarding whom the author should interview next (i.e. snowball sampling technique).** This was especially helpful during the attachment period at the Ministry, as the author's interactions with staff, officers, and officials allowed her to be introduced to other potential interviewees. The author was also pleased to discover that upon explaining the topic of her research, most interviewees were more than happy to offer support by getting the author in touch with other potential participants from their network of contacts, with some of them being candidates whom the author had overlooked or did not initially consider to interview.

While the above lessons taught the author to review her approach to the interview sessions, some challenges were still encountered in other ways. For instance, in all of the scheduled interviews conducted in person, the author was asked to send out the questionnaire in advance (i.e. before the interview). This resulted in more time spent tailoring specific questions for every willing participant, as the author could not send the generic set of semi-structured questionnaires that were previously prepared. The author had to consider the organisation represented and the post held by each participant, in order to

ensure that strategic questions would be asked and relevant answers helpful to the research topic would be received. In this regard, while special attention and extra time were required for the author to develop the questionnaires, the answers that were ultimately received were indeed comprehensive. The approach to the interviews, therefore, were again transformed along the way in that participants were given the option to type in their answers in the document containing the questionnaire and submit it to the author via e-mail, or they could provide their answers in person, over the telephone, or through Skype. One participant had even requested the author to send the questions via text message.

Out of curiosity, the author enquired one of the participants as to his reasons for insisting on receiving the questions beforehand instead of simply meeting the author in person and answering questions on the spot. The participant explained to the author that he was concerned with how strongly the public has reacted to "any" statements made by "anyone"[30] in recent times. He expressed an opinion that anything could be deemed sensitive to any group in Malaysian society, and mentioned that he was especially fearful of seeing how some groups of individuals have been quick to jump online and "bash" others on statements that were made, at times without understanding the intentions behind such statements. He said that receiving the questionnaire from the author beforehand could allow him some time to not only prepare data and information to answer the questions, but to choose his words carefully, and also as a way of keeping

[30] Be they private individuals sharing statements or photos in social media, or public figures mentioning something on television.

track of the interaction he has had with the author. He specifically mentioned that if anything were to happen, he would have "proof" from his side. The author later encountered similar sentiments expressed by a few other interviewees, which became an interesting finding in itself as it arguably indicates that there may be an amount of fear and hesitation in expressing one's opinions in Malaysia. What the author finds surprising is that this apprehensive behavior and mentality **does not necessarily stem from fear of the authorities, but from other members of the public as well**.

Despite the various approaches and efforts adopted, the author was not spared from being given the runaround by some of the potential participants. These were individuals who responded very positively to participating, had met the author in person, expressed a strong willingness to help contribute to the research and to provide the information that the author was seeking, and encouraged the author to send in the questionnaire via e-mail. However, they then remained silent and did not respond to the author's efforts to follow up. The author has assumed that this group of potential participants were either too busy to attend to the author's questions, or could not provide the answers as they were unsure or feared making "mistakes" or statements that might cause controversy. As the author learned more about the various aspects of Malaysian culture, it was evident that this might arguably be an example of one of the reported practices that would be employed when one wishes to avoid dealing with a particularly difficult or complex issue i.e. "ignore the problem and it will

eventually go away". An exploration of Malaysian culture will be discussed further in Chapter 4.

2.6.4. *Time, Location and Events*

The fact that the case study focuses on Malaysia meant that the author was required to return to the country in order to conduct site visits and collect data. In this regard, the author had a limited amount of time to obtain the information needed during her stay in Malaysia. The survey, for example, could have been disseminated in hardcopy, but the author was unable to do so due to limitations in time, opportunity, and location. Some unexpected events that affected the country had also taken place when the author was conducting fieldwork in Malaysia, such as the missing Malaysia Airlines flight of MH347 in early 2014, and the major floods that occurred in late 2014 into early 2015. During these tragic events, the nation was in mourning and all Government bodies, including top officials, were busy attending to the people's needs. Hence, the author's intentions to seek interviews or information in these particular times were foiled, as the country was grappling with extremely urgent matters.

2.7 THEORETICAL FRAMEWORK

On the premise that the theoretical framework of this study is multi-faceted, the analytical approach adopted in this research was drawn from a variety of theoretical developments and empirical research in areas concerning:

1) *Good environmental governance,*

2) *Environmental access rights,*

3) *Environmental citizenship, and*

4) *Deliberative democracy.*

To reiterate what was already mentioned, **this research does not intend to prove any theories**. The theoretical framework, therefore, will be used instead as a basis for exploring and building the argument throughout this research, contributing to the author's depth of understanding in the research topic, and lending some inspiration to the author's conceptual framework for access to environmental information and public participation in environmental decision-making that the author will propose for Malaysia.

Below the author provides a summary of the main theories that have influenced the development and direction of this research.

2.7.1. *Governance Theory*

Matthias Finger (2008) explains that in the age of globalization, states increasingly have to work in networks (p. 39). Finger thus argues that "[g]overnance theory first stems from the observation that nation-states increasingly have to collaborate with non-state actors so as to achieve their goals. This is especially true at the global level, where nation-states increasingly have to share power with transnational corporations and non-governmental organizations" (2008. p. 38-39). According to Guido Bertucci (cited in United Nations Department of Economic and Social Affairs 2000), partnerships are the very essence of governance and that "leadership is often defined as the ability to create 'vision' that provides the impetus for creating partnerships and the glue for maintaining these partnerships" (p. 6).

The dimension of the Governance theory that is adopted in this research considers the role of other actors in environmental governance and decision-making in Malaysia. The author will thus refer to the participatory dimension of the Governance theory in exploring how Malaysia could engage with citizens and other key actors, such as non-governmental organisations. The Governance theory's emphasis on participation of all actors in decision-making will also be adopted as a guideline to refer to in this research when discussing the topic of environmental governance, specifically the normative concept of good

environmental governance, and in analysing the focus of the research topic, that is access to environmental information and participation in environmental decision-making. As Finger goes on to explain, "in the context of political science and international relations, governance is above all a pragmatic concept, defining less state-centric ways to solve collective problems" (2008, p. 39).

2.7.2. *Theory on Deliberative Democracy*

John S. Dryzek (2000) explained that there has been a strong deliberative turn in the theory of democracy that "represents a renewed concern with the authenticity of democracy: the degree to which democratic control is substantive rather than symbolic, and engaged by competent citizens" (p. 1-2). While the author does not seek to go into depth on the definitions and forms of democracy, as Dryzek had, this research will adopt Dryzek's stance on what deliberative democracy should entail[31]. Dryzek's approach to democracy takes on a more wholesome view of citizen participation, evolving from the traditional approach in the theory of democracy, which is mainly viewed "in terms of aggregation of preferences or interests into collective decisions through devices such as voting and representation" (Dryzek 2000, p. v). According to Dryzek (2000), "Deliberation as a social process is distinguished from other kinds of communication in that deliberators are amenable to changing their judgments, preferences, and views during the course of their interactions, which involve persuasion rather than coercion, manipulation, or deception" (2000 p. 1). In

[31] This research also acknowledges Dryzek's views on and preference for discursive democracy, accepting it as a branch of deliberative democracy.

fostering authentic deliberation, Dryzek favours "[a] more tolerant position…[that] would allow argument, rhetoric, humour, emotion, testimony or storytelling, and gossip. The only condition for authentic *deliberation* is then the requirement that communication induce reflection upon preferences in non-coercive fashion" (Dryzek, 2000 p. 1-2). This research will adopt the theory's view of allowing deliberation to take place in order to achieve a more wholesome process of public participation in environmental decision-making, and apply it to the construction of the framework that will be produced as an outcome of this research. Therefore, the stance held in research regarding public participation in environmental decision-making is that it should include, in some form or another, opportunities for deliberation (between the public, Government, corporations, civil society, and experts), rather than be rigidly limited to one-way communication or strict procedures that do not allow for questions to be posed or any discussion to be held regarding decisions that might affect the environment.

2.7.3. *Theory on Environmental (or Ecological) Citizenship*

Andrew Dobson's theory on ecological citizenship challenges the idea of democratic participation being confined only to the public sphere, and introduces the notion of the private sphere as being an arena where ecological citizens exercise their democratic rights. According to Dobson (2004), "For ecological citizenship, this separation of public and private cannot hold. For one thing, the household is the site of much ecological citizen activity, and for another, it may even be that the virtues of ecological citizenship are learned there. In general,

indeed, the ecological citizen operates at many different levels of society" (p. 10). Dobson argues that compassion and a sense of justice and obligation to the world and future generations is what makes the ecological citizen: "the source of the ecological citizen's obligations does not lie in reciprocity of mutual advantage, but in a non-reciprocal sense of justice, or of compassion…Ecological citizens can expect nothing in return from future generations and other species for discharging their responsibilities towards them…Ecological citizenship involves a different type of obligation: one owed to strangers, who may be distant in time as well as space" (2004, p. 6).

This research will adopt the term "**environmental** citizenship" as opposed to "*ecological* citizenship" to avoid confusion with the research topic that uses also the term "environmental" when referring to the protection of nature and Earth in relation to human wellbeing and development, such as the use of "environmental decision-making" and "environmental sustainability". Dobson also began to use the terms interchangeably later on, describing "environmental citizenship" as a dynamic concept with various meanings (Dobson 2010). In this thesis, the author will use the updated definition provided by Dobson (2010) who states, "Though definitions vary, **'environmental citizenship' can be thought of as pro-environmental behaviour, in public and in private, driven by a belief in fairness of the distribution of environmental goods, in participation, and in the co-creation of sustainability policy**" (p. 1).

Dobson also elaborates on the characteristics of environmental citizenship, which the author believes could be universally applicable. According to Dobson (2010, p. 7), the **environmental citizen**:

1. *Believes that environmental sustainability is a common good;*
2. *Is moved by other-regarding motivations as well as self-interested ones (the environmental citizen says "I will even if you won't");*
3. *Believes that ethical and moral knowledge is as important as techno-scientific knowledge;*
4. *Believes that other people's environmental rights engender environmental responsibilities ("less about the rights and duties of citizens vis-à-vis the government, and more about the rights and duties of citizens vis-à-vis each other");*
5. *Believes that these responsibilities are due not only to one's neighbours or fellow nationals but also to distant strangers (in space and in time); and*
6. *Is aware that private environment-related actions can have public environment-related impacts (practices that take place in the private arena such as recycling can be regarded as "citizenly")*[32].

[32] More details on this interpretation and understanding of "environmental citizenship" can be referred to through the following report by Dobson (2010): <http://www.sd-research.org.uk/sites/default/files/publications/SDRN%20Environmental%20Citizenship%20and%20Pro-Environmental%20Full%20Report_0.pdf> [Accessed 16 June 2013].

Dobson's theory on environmental citizenship will thus be referred to in this research as a guideline for the kind of characteristics that the Malaysian public, especially its citizens, should adopt in order to do their part in improving environmental governance because as the author mentioned above under the Governance theory, all actors need to play an active role as well. The responsibility of maintaining environmental sustainability (in order to achieve sustainable development) through fostering good environmental governance, especially with regard to advancing environmental access rights should not only rest with the Government, but indeed be shared by all, including the citizens.

2.8 CHAPTER SUMMARY

This chapter has provided a detailed description of the methodologies that were employed in this research. The author has shared and explained the qualitative, exploratory research design, and the single-case embedded case study approach that was adopted as well as the different types of data collection that were used within the time limit of each step in the author's research strategy staircase. The author also listed down the criteria that were used for selecting the case study and the various types of limitations that were encountered in the three phases of data collection. Although the limitations of this research had posed some obstacles for the author, it nevertheless served to impart lessons in understanding how to obtain willing participants in Malaysia, how to adapt to aspects of the communication culture in certain organisations and groups of

people, and how to conduct more engaging interviews with participants to gain valuable answers. Finally, the theoretical framework of this research was explained in this chapter as well, and the author has made clear that the research does not intend to prove or dispel any theories, but will refer to them instead as a guidance towards understanding the research topic and inspiring the conceptual, policy-based framework that the author will produce as an outcome of the research.

CHAPTER 3

LITERATURE REVIEW & ANALYSIS OF KEY CONCEPTS

> *"Young citizens today are growing up in a world that is very different from their parents and grandparents. It's a world in which they are confronted by four difficult and intersecting challenges: dangerous environmental change, growing social inequality, an unsustainable global economy, and weakening democracies as local communities struggle to hold global power to account"* (Hayward 2012, p. 1).

3.1 INTRODUCTION

This chapter will examine and analyse key existing literature surrounding the main concepts and area of focus under the research topic. To that end, the author will discuss the notion, characteristics and normative standards of good environmental governance, the concept of environmental access rights and will introduce the pillars under Principle 10 of the Rio Declaration on Environment and Development (Principle 10 or P10), which also form the core pillars of the Aarhus Convention. As the scope of this research is limited to exploring the first two (out of three) pillars of P10 and Aarhus Convention, this chapter will seek to discuss the meaning, functions and importance of public[33] access to environmental information and participation in environmental decision-making.

[33] In this thesis, the author has adopted the definition of "public" from the UNEP Guidelines for the Development of National Legislation on Access to Information, Public Participation and Access to Justice in Environmental Matters (Bali Guidelines) (UNEP 2011), which defines the "**the public**" as "one or more

The chapter will begin from a view of the global scenario, and introduce the importance of environmental governance in achieving sustainable development. The author will briefly explore the challenges of global environmental governance, and build an argument for improving environmental governance at national level. An exploration of the concept "good (and/or effective) environmental governance" will also be discussed in relation to the normative status of Principle 10, and the possibility of the principle to be regarded as part of customary international law, before explaining the link that can be made between human rights, democracy, and the environment in the pillars under "environmental access rights" (i.e. the pillars of Principle 10). The author will then proceed to focus in on the national setting of Malaysia. A brief background on Malaysia and its environmental challenges as well as the country's vision for development will thus be introduced, followed by an explanation of the "transformation" efforts and citizen-centric approach that the Government has been attempting to emulate in recent years. Through reviewing the literature and providing in-depth analysis, this chapter intends to provide an introductory understanding of the concepts on which the research is built, their importance and links to one another, as well as where Malaysia fits into the narrative.

---

natural or legal persons and their associations, organizations or groups" and "**the public concerned**" as "the public affected or likely to be affected by, or having an interest in, the environmental decision-making".

3.2 ENVIRONMENTAL GOVERNANCE

3.2.1. *Challenges in Global Environmental Governance*

Factors contributing to the exacerbation of environmental issues are multifaceted and can range from fragmented policies, lack of monitoring and evaluation, financial limitations, institutional inconsistencies, legitimacy concerns, conflicting demands of nation-states, transfer of technology, differing concerns towards sustainable development and the **lack of earth-literacy and eco-awareness amongst both old and new generations** [emphasis added] (Scottish Executive 2006; Carlarne 2008). Certainly environmental issues, which are faced globally, require urgent attention as living on one planet[34] means that humans are interconnected through what former UN Secretary-General, Kofi Annan, describes as "an intricate web of ecological, social, economic and cultural relationships that shape our lives" (United Nations 2001, p. 3). In acknowledging and understanding this interconnection between us, Annan stresses that "we will need to display greater responsibility—for the ecosystems on which all life depends, for each other as a single human community, and for the generations that will follow our own, living tomorrow with the consequences of the decisions we take today" (United Nations 2001, p. 3). Hence, it can be agreed that global environmental governance in essence depends on global multilateral cooperation: "The distinct characteristic of 'global governance' lies in its

[34] According to the WWF Living Planet Report 2012 Special Edition: On the Road to Rio+20 (2012), "demand on natural resources has doubled since 1966 and we are currently using the equivalent of 1.5 planets to support our activities." There is hence a notion that as we have only one planet to share, we should care for it if we care about the fate of our future. Refer to the following link for more details: <http://assets.wwf.org.uk/downloads/lpr_2012_rio_summary_booklet_final_9may2012.pdf> [Accessed 12 Nov 2012]

assumption that the effective handling of problems is no longer the exclusive responsibility of governments but of 'joint activities by governments, international and supranational institutions, business and other nongovernmental organizations, bound together in a web of formal and informal connections'" (Brand & Reusswig 2006, p. 80). Additionally, studies have shown that environmental problems are spread across the globe and that concern over the state of the environment is no longer a matter that affects merely wealthy and highly industrialised countries (Brand & Reusswig 2006, p. 88).

Brown (2009) observes that "[m]any attempts have been made by governments and global systems of governance to integrate the objectives of international development and environmental sustainability" (p. 32), while Andresen (2001) points out that environmental issues have appeared more often on the agenda of institutions such as the UN Development Program (UNDP), the World Bank, and regional multilateral development banks, as well as specialized agencies. The World Resources Institute (WRI) (2003, p. 138) reports that the current system of global environmental governance consist of three main elements:

1. **Intergovernmental organisations** – these include the UN family of organisations that are tasked with coordinating policy on the environment at the international level, such as the UNEP, UNDP, and other specialised agencies and commissions (e.g. the Commission on Sustainable Development or CSD). Other international organisations

such as the World Bank and World Trade Organization (WTO) also play an essential role in global environmental decision-making.

2. **Framework of international environmental law** – these include the network of environmental treaties, such as the Framework Convention on Climate Change, Convention on Biological Diversity, and the Kyoto Protocol, which are legally binding agreements made among countries to tackle various environmental issues, and requires each State to be responsible for action at national level.
3. **Financing mechanisms** – these include the Global Environment Facility, voluntary contributions that fund UN agencies, and financing provided by the World Bank and other multilateral development banks for development activities with environmental elements.

However, while the "greening" of international organisations have been deemed positive, Andresen states that it is also insufficient and seemingly paradoxical: "on the one hand there has been a tremendous growth in the number of international institutions to deal with environmental issues; on the other hand, the environment continues to deteriorate in many parts of the world" (Andresen 2001, p. 19). Indeed, policies, laws and institutions that have been established to govern environmental issues are mostly implemented at national level, while global mechanisms remain strongly compartmentalized (United Nations Committee for Development Policy 2012). As a result, concerns have been expressed towards the fragmentation and incoherence that are apparent in

global environmental governance, which has made slow progress: “The immense growth of the system of global environmental governance signifies the world’s growing appreciation of the scope and scale of the problems. However, this growth has also made the system unwieldy and increasingly incoherent. There is now a general agreement that this system is more cumbersome and less effective than it must be if we are to confront […] serious environmental challenges” (Najam et al. 2006, p. v). The Third World Network (2001) also makes a similar observation by stating that “[a]t the moment, environmental governance at the international level is fragmented, diffused and sometimes overlapping” (p.15), and a UNDP report confirms that institutions of global governance require coordination to avoid policy fragmentation and incoherence with multilateral regimes and international standards (UNDP 2012, p. 19).

3.2.2. *Focusing on environmental governance at the national level*

Due to the complex incoherence and slow progress made in coordinating the current system of global environmental governance, a more local approach may serve to help address this problem. Regardless of the institutional frameworks established on the global and regional level, environmental governance cannot be effective without successful implementation at national level. Najam, Papa and Taiyab (2006) stated, “National implementation is the ultimate key, both to the efficacy of the [Global Environmental Governance] system and to meaningful environmental improvements” (p. 5) while the same is echoed by Fulton and Benjamin (2011) who agree that “effective environmental

governance *at the country level* [sic] will be key to fulfilling international and national sustainability aspirations" (p. 2). Indeed, this is emphasised in Chapter 28 of Agenda 21 (UNCED 1992), which encourages local authorities to adopt a "Local Agenda 21" (Section 28.3) because "so many of the problems and solutions being addressed by Agenda 21 have their roots in local activities" (Section 28.1)[35].

As the author previously mentioned in Chapter 1, it is important to improve environmental governance in order to achieve sustainable development. However, effective implementation of environmental governance at national level would arguably require it to be transparent, participatory, democratic, and accountable. These characteristics form an important part of the concept of **good environmental governance**.

3.2.3. *Good Environmental Governance*

Governance, and more specifically in this research, environmental governance, are terms with multiple definitions and interpretations. According to Louis Kotzé (2012, p. 10):

> "Governance is a catch-all term; it deals with legal and non-legal issues; it involves novel forms of authority; issues of environmental governance are not confined only to environmental law, but also require a broader trans-disciplinary

[35] Further information on Agenda 21 and Local Agenda 21 can be referred to through the following link: <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf> (United Nations Conference on Environment & Development (UNCED) 1992)[Accessed 12 Dec 2012]

> legal view that straddles the traditional boundaries of environmental law; and environmental governance derives from a multi-disciplinary foundation, which suggests that while it contains some legal elements it also heavily relies on a range of other disciplines (for example, ecology, ethics, sociology, politics and economics)".

Kotzé (2012) believes that environmental governance is an evolving concept and hence argues that its exact construct remains open to debate (p. 15). Similarly, Jeffery (2005) insists that the term 'governance' must be distinguished from 'government' as the concept of environmental governance does not only apply to government jurisdiction and that citizens should also play a role and take action: "It is imperative that we study the actions of the government in terms of environmental policy and decision-making, but we must also observe how citizens take on their own responsibility and develop environmental initiatives" (p. 1).

In the "legal"[36] sense, the concept of environmental governance, especially when integrated with the characteristics of good governance appears to have gained a somewhat normative status, although this remains unclear due to an absence of a universally agreed definition. Nevertheless, the author would highlight that environmental governance and good governance (as well as good environmental governance) are terms that have been generally accepted and adopted internationally by nation-states and by reputable intergovernmental

[36] As one subset of governance, "legal" here refers to binding norms and prescribed standards.

organisations such as the United Nations (UN) as well as the European Union (EU)[37] (Huong 2009; Commission of the European Communities 2001). The author would therefore argue that this might indicate that the concept of good environmental governance, especially with regard to its principles of transparency, public participation, collaboration, and accountability, is recognised as an emerging international normative standard in the governing of environmental matters.

If such well-accepted concepts could lead to the adoption and development of certain norms at national and international level, they may arguably be considered eventually as customary laws. According to Lepard (2013), "Customary law can be viewed as 'informal' legislation" (p. 7), which States like Malaysia may be obligated to follow so as to conform to international norms and standards. Duvic-Paoli (2012) argues that Aarhus Convention norms are on the road to becoming customary rules (p. 83), and mentions the example of a 2004 case ruling of *Taskin and Others v Turkey* whereby "the European Court of Human Rights (ECtHR) hinted that the 1998 [UNECE] [Aarhus Convention] might already be of a customary nature" (p. 81). Duvic-Paoli also mentions the possible acceptance of soft law instruments, such as the Rio Declaration, as a customary norm or law, stating that although the International Court of Justice (ICJ) "has not yet recognized the existence of an obligation to include the public in environmental decisions, **the right to public participation could be acknowledged later as a general principle of law or as a customary norm**

[37] An example would be the EU's White Paper on European Governance, which states and explains five principles underpinning good governance (Commission of the European Communities 2001).

[emphasis added], most probably on the basis of globally recognized texts, including human rights instruments and soft law instruments such as the Rio Declaration" (2012, p. 85).

An in-depth discussion and analysis on whether or not the concept of good environmental governance could or should be regarded as customary international law is beyond the scope and limitations of this research. Therefore, the author does not intend to analyse the possibility or feasibility of the concept being formally accepted as a legal term or standard norm (although this could be possible and interesting for one to do under a separate research topic and thesis). In this research, "good environmental governance" is perceived instead as a guiding concept - an aspiration if you will – that could be referred to and adopted as a global or State vision, especially in the advancement of sustainable development. Nonetheless, the author has touched on the subject here and will briefly revisit it again in other sections of this chapter to underline the increasing acknowledgement of the significance and necessity of good environmental governance, and especially Principle 10 pillars of access to information, public participation and access to justice, in addressing global as well as national environmental issues. In order to gain a deeper understanding of what "good" (and/or "effective")[38] environmental governance would constitute, some

[38] To avoid confusion in meanings between the use of the two terms, "good environmental governance" and "effective environmental governance" will be used synonymously in this thesis, as literature thus far have also used both terms interchangeably i.e. references to characteristics and definitions of "good" environmental governance have more often than not shared similar (if not the same) description of those that are referred to under "effective" environmental governance. Of course, this could be further argued, but such a debate is not within the scope of this research. Thus, the author's occasional reference to *effective environmental governance* (in according to the sources of literature that mention it) should not be viewed as entirely separate in meaning from use of the term *good environmental governance*.

conceptual models that could be applied at national level will be explored in this section.

3.2.3.1. *Good Governance*

Arguably, the general notion from which the term "good environmental governance" stems is that of "good governance". Similar to the term "sustainable development", there is no single and exhaustive definition for good governance as it depends on the context and objectives. Nevertheless, the United Nations Office of the High Commissioner for Human Rights (OHCHR) (2013) finds that the concept of good governance may encompass, but should not be limited to: full respect of human rights, the rule of law, effective participation, multi-actor partnerships, political pluralism, transparent and accountable processes and institutions, an efficient and effective public sector, legitimacy, access to knowledge, information and education, political empowerment of people, equity, sustainability, as well as attitudes and values that foster responsibility, solidarity and tolerance[39].

According to the OHCHR (2013), there is a common consensus that good governance relates to political and institutional processes and outcomes that are essential in achieving development goals. Ultimately, the degree of good governance is tantamount to how effectively it is able to deliver the promises of rights that it guarantees, which may include but are not limited to political,

[39] See the webpage entitled "Good Governance and Human Rights", by the OHCHR (2013): <http://www.ohchr.org/EN/Issues/Development/GoodGovernance/Pages/GoodGovernanceIndex.aspx> [Accessed 16 March 2013]

economic, social, civil, cultural, and environmental rights (OHCHR 2013). Indeed, the concept of good governance has been recognised, accepted and, to some extent, promoted by international institutions of strong legal, political and economic influence. As Hogl et. al. (2012) report, "Good governance principles have most prominently been propagated by the International Monetary Fund (IMF), the World Bank (WB), the OECD and the European Union (EU)" (p. 6). However, in the absence of a universal definition of good governance, and due to the scope of this research, the author will not seek out and analyse all available definitions of good governance[40], but shall instead refer to the eight characteristics provided by the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) as a basic foundation to refer to in this research.

"Governance", according to UNESCAP (2009) is simply "the process of decision-making and the process by which decisions are implemented (or not implemented) and can be used in several contexts". Governance also focuses on the formal and informal actors involved in decision-making as well as the formal and informal structures established to implement the decision (UNESCAP 2009). Here, Government is understood to be one of the actors in governance while other actors[41] involved vary depending on the level of government that is under

[40] As previously mentioned, for example, the Commission of the European Communities' White Paper on European Governance (2001, p. 10) outlines five principles of good governance, which are almost identical to those provided under UNESCAP. The principles can be referred to via the following link: <http://europa.eu/rapid/press-release_DOC-01-10_en.pdf> [Accessed 15 Sept 2016].

[41] Additional actors at national level, such as media, lobbyists, international donors, multi-national corporations, and so on may play a role in decision-making or in influencing the decision-making process (UNESCAP 2009).

discussion[42]. UNESCAP established **eight characteristics for good governance**, as displayed in Figure 4 below.

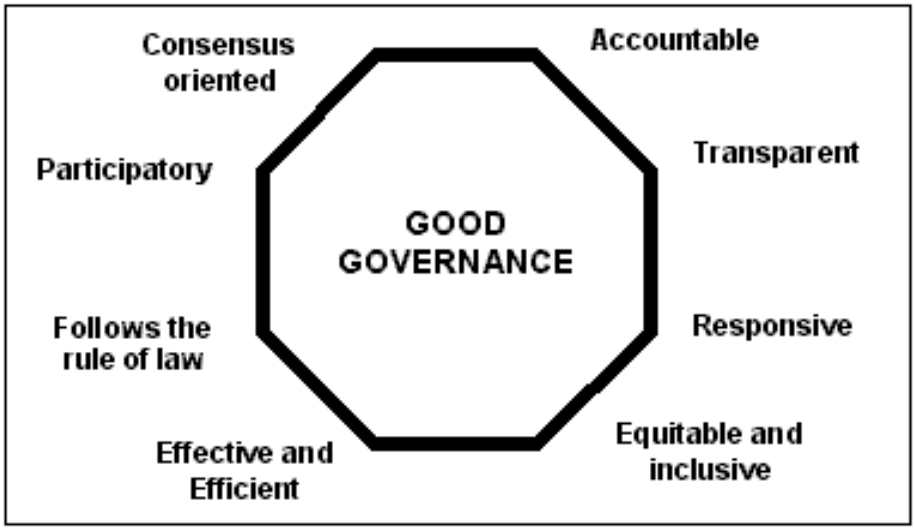


Figure 4: UNESCAP's Characteristics of Good Governance

To summarize, the characteristics of good governance described by UNESCAP (2009) strives to ensure that:

1. **Participation** should involve all actors in society who need to be informed and allowed to organize.
2. **Rule of law** needs to include full protection of human rights.
3. **Transparency** means that information is freely available, directly accessible, easy to understand in any form and sufficiently provided.
4. **Responsiveness** requires that institutions and processes try to serve all stakeholders within a reasonable timeframe.

[42] It may vary, for example, between rural areas as opposed to urban areas that can be more complex.

5. **Consensus oriented** requires balancing different interests in society while taking into consideration the historical, cultural, and social contexts
6. **Equitable and inclusive** means that all members of society should not feel excluded as all groups need to be given opportunities to participate in improving their wellbeing.
7. **Effectiveness and efficiency** means that results produced meet the needs of society while making the best use of resources that includes sustainable use of natural resources.
8. Last but not least, **accountability** is described as a key requirement because governmental institutions, the private sector and civil society organizations must be accountable to public and institutional stakeholders through transparency as well as proper enforcement of rule of law.

3.2.3.2. ***Good (and/or Effective) Environmental Governance***

One could imagine that the above characteristics of good governance (as displayed in Figure 4) may also be relevant and applicable to the environmental context. As previously mentioned in Chapter 1 of this thesis, UNEP states that "[g]ood environmental governance takes into account the role of all actors that impact the environment" (Huong 2009). However, a clear and specific definition of the term "good (and/or effective) environmental governance" was not identified in or provided by any international or Malaysian legal documents, policies, and/or institutions. This may perhaps be due to an absence of a universal definition, and

arguably because the meaning of such a term is still being explored and discussed at global and national level. Jeffery (2005), for example, opines that good environmental governance is measured by “the effectiveness of strategies and initiatives implemented to achieve environmental goals. These goals may be capacity building, increased access to environmental information, participation and justice” (2005, p. 1).

This subsection provides the author’s exploration of a few working models and definitions for “good” and/or “effective” environmental governance found in literature, as a way of presenting some examples of what such a concept would envision, especially in relation to environmental access rights. These models and definitions, which the author discusses below, are not all official definitions derived from institutions of legal authority, as the author was unable to find any official interpretation of the term at the time of writing. Nevertheless, the recognition of the term by legal experts, such as Fulton and Benjamin, and the adoption of the concepts related to the term by internationally recognised organisations, such as the OECD, could serve as an indication that the notion of “good environmental governance” is being accepted as a normative standard, and that efforts are underway in translating the meanings behind this term into national plans, programmes, policies and laws. It could also be argued that international NGOs, such as the IUCN, could play an important role in the implementation of international agreements. For instance, Desai (2010) provided an example of the 1971 Ramsar Convention, wherein the IUCN was requested by the Conference of the Parties to provide services for the Ramsar Bureau (i.e.

the Secretariat). Desai explained that in this case, "it seems that the IUCN played an important part in the evolution of the Ramsar Convention" (p. 152). The author thus believes that although some organisations may be of no legal authority, they may still be able to contribute to influencing the normative status of key concepts in environmental matters, such as that of "good" and/or "effective" environmental governance.

a. *The Seven Core Precepts by Fulton and Benjamin*

Fulton and Benjamin (2011) have identified a common set of **seven core precepts**[43] needed to lay the foundation for effective environmental governance, as follows:

1. Environmental laws should be clear, even-handed, implementable and enforceable;
2. Environmental information should be shared with the public;
3. Affected stakeholders should be afforded opportunities to participate in environmental decision-making;
4. Environmental decision-makers, both public and private, should be accountable for their decisions;

[43] Fulton and Benjamin (2011) explain that the precepts can be applied to both efforts in protecting human health and in protecting and conserving natural resources: "The identification and reinforcement of these core precepts can assist countries seeking to strengthen their environmental governance systems so that they are better able to address their environmental problems by making and implementing sound, science-based decisions".

5. Roles and lines of authority for environmental protection should be clear, coordinated, and designed to produce efficient and non-duplicative program delivery;
6. Affected stakeholders should have access to fair and responsive dispute resolution procedures; and
7. Graft and corruption in environmental program delivery can obstruct environmental protection and mask results and must be actively prevented.

As seen in the first three precepts listed above, legal frameworks, sharing of environmental information, and participation in environmental decision-making are necessary elements, while the sixth precept can be linked to people's access to justice. Fulton and Benjamin deduce that environmental governance requires coordination not only between environmental law, but also implementation mechanisms, accountability regimes, and institutional arrangements in addition to citizen participation.

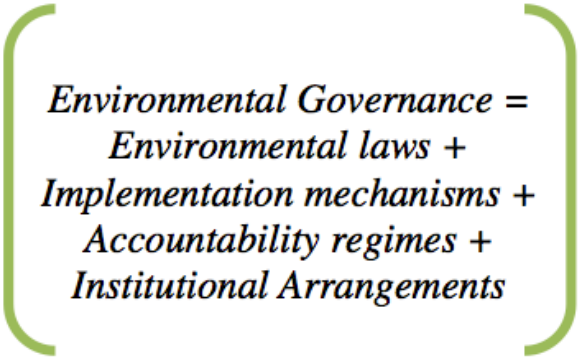


Figure 5: Environmental Governance, according to Fulton and Benjamin (2011)

b. ***Lessons from the APFED***

The Asia Pacific Forum for Environment and Development (APFED) has also agreed on several criteria that are essential in nurturing effective environmental governance and success of sustainable development projects undertaken, as displayed in Figure 6 (APFED 2009).

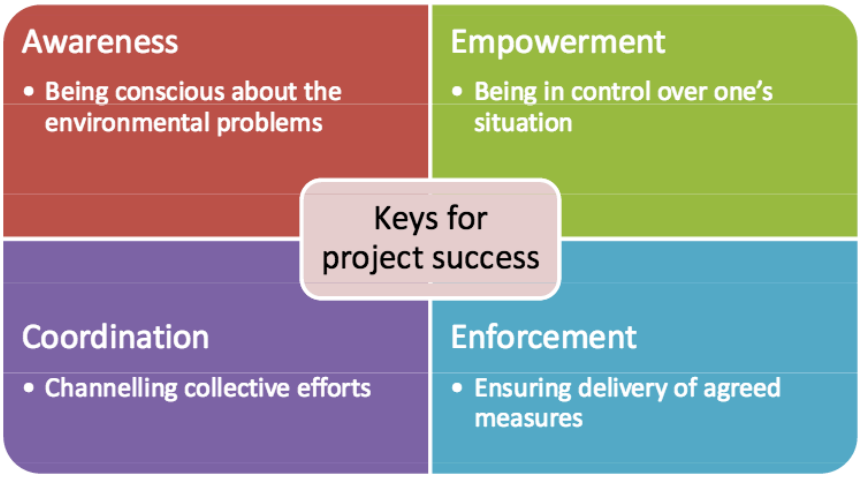


Figure 6: Lessons from APFED for Effective Environmental Governance (APFED 2009)

In the APFED's model for effective environmental governance, the key components needed to ensure project success are:

- **Awareness**
- **Empowerment**
- **Coordination**
- **Enforcement**

As seen in the APFED model, part of implementing effective environmental governance is to foster a sense of ownership, and to empower people through including them in the decision-making process as well as encourage their

participation in finding solutions to environmental issues that affect them. According to Foti et. al. (2008) of the World Resources Institute, environmental movements in many societies tend to be nascent, fragile or marginal and therefore, "officials may fail to value immediate environmental concerns or neglect longer term issues that reflect the needs of future generations. Lawmakers may not know how to make decisions about natural resources when there is incomplete information or little public signaling about preferences" (p. 4). Thus, with regard to addressing environmental issues, governments should not be closed when making decisions concerning the environment, but should foster openness, which can be practiced through providing access to information, public participation in decision-making processes and environmental justice to help address concerns for the environment in a collective and collaborative manner.

c. *Eight Principles by the Natural Resources Defense Council (NRDC)*

As an outcome of its participation in a public workshop on environmental compliance and governance organised by India's Ministry of Environment and Forests, the Natural Resources Defense Council (NRDC)[44], which is a non-profit environmental advocacy group, produced a briefing report[45] that elaborates on the principles of effective environmental governance, formulated through lessons drawn in compliance and enforcement of environmental laws in the United States

[44] The NRDC is a non-profit, international environmental advocacy group based in New York that was founded in 1970 "by a group of law students and attorneys at the forefront of the environmental movement" (NRDC 2013). More information on this organisation and its advocacy work can be referred to through the following link: <https://www.nrdc.org/> [Accessed 18 March 2013].

[45] The report entitled "Effective Environmental Compliance and Governance" is available through the following link: <http://docs.nrdc.org/international/files/int_10051901a.pdf> (Kar et al. 2010) [Accessed on 18 March 2013].

and elsewhere. In the report, Kar et al. (2010) claims that "[o]ver the past four decades in the United States, environmental compliance and ecosystem protection have improved significantly through the use of these tools, leading to cleaner rivers and safer air-quality levels"[46]. The eight critical principles for effective environmental governance described by the NRDC report (Kar et al. 2010) are listed as follows:

1. Clarity and Coordination Between Federal and State Agencies
2. Retaining Highly Qualified Professionals and Dedicated Agency Resources
3. Monitoring by Regulated Entities: Self-Monitoring and Self-Reporting
4. Incentive and Outreach Compliance Programs
5. Agency Enforcement Tools: Administrative, Civil and Criminal Authority
6. Agency Accountability
7. Transparent and Meaningful Public Participation
8. Citizen Suits

d. *A Description by the International Union for Conservation of Nature*

Again, the necessity for transparency, accountability and meaningful public participation was listed above as one of the critical principles. The same can be seen in the International Union for Conservation of Nature's (IUCN) description of effective governance, which states that it includes, among others, "respect for

[46] Refer to NRDC article, "India Focus: India Focus: Principles for Effective Environmental Governance" for more details on each of the eight principles at <www.nrdc.org/international/india/files/governance-fs.pdf> [Accessed on 18 March 2013].

human rights, accountability, transparency, rule of law, participation in decision-making, access to information and justice on environmental issues…In addition to this, adopting participatory approaches are essential to build resilient governance, an issue which takes on increasing importance in an era of profound global change" (IUCN 2012)[47]. While the IUCN views the adoption of participatory approaches as a crucial component in constructing resilient governance, the Organisation for Economic Cooperation and Development (OECD) emphasizes the importance of public participation as a way of improving Government relations with citizens.

e. *The OECD's Ten Guiding Principles*

Based on the experience of its member countries, the Working Group on Strengthening Government-Citizen Connections of the OECD (2001) proposes a set of ten guiding principles for successful information, consultation and active participation in policy-making, which the author has extracted and slightly adapted, as follows:

[47] Refer to the following link for more information:
http://www.iucn.org/news_homepage/events/iucn___rio___20/iucn_position/environmental_governance/
[Accessed 2 February 2013]

1. ***Commitment*** - Leadership and strong commitment to information, consultation and active participation in policy-making is needed at all levels.
2. ***Rights*** - Citizens' rights to access information, provide feedback, be consulted and actively participate in policy-making must be firmly grounded in law or policy.
3. ***Clarity*** - The respective roles and responsibilities of citizens (in providing input) and government (in making decisions for which they are accountable) must be clear to all. Objectives and limits should be well defined from the outset.
4. ***Time*** - Public consultation and active participation should be undertaken as early in the policy process as possible.
5. ***Objectivity*** - Information provided by government during policy-making should be objective, complete and accessible. All citizens should have equal treatment when exercising their rights of access to information and participation.
6. ***Resources*** – For public information, consultation and active participation in policy-making to be effective, adequate financial, human and technical resources are needed. Government officials must thus have access to appropriate skills, guidance and training.
7. ***Coordination -*** Initiatives to inform citizens, request feedback from and consult them should be co-ordinated across government. This enhances knowledge management, ensures policy coherence, and avoids

duplication. Co-ordination efforts, however, should not reduce the capacity of government units to ensure innovation and flexibility.

8. ***Accountability -*** Governments have an obligation to account for the use they make of citizens' inputs received. To increase this accountability, governments need to ensure an open and transparent policy-making process amenable to external scrutiny and review.
9. ***Evaluation*** - Governments need tools, information and capacity to evaluate their performance in strengthening their relations with citizens.
10. ***Active Citizenship –*** Governments can take concrete actions to facilitate citizen's access to information and participation, raise awareness, and strengthen civic education and skills, while supporting capacity building among civil society organisations.

(OECD 2001, p. 83-88)

The OECD believes that Governments can benefit from active citizens and a dynamic civil society, and affirms that **governance and public participation through civic engagement matter for societal and individual wellbeing**. Its *How's Life?* report, which focuses on measuring citizen wellbeing among member countries, explains how the opportunity to participate freely in political activities and the ability to express one's political voice can lead to improved governance and wellbeing:

"By engaging in political activities, people openly express their preferences and needs; this in turn can inform policy, thereby influencing people's well-being. Political voice may also reduce the potential for conflicts and enhance the prospect of building consensus on key policies, leading to more effective policy implementation and strengthening the relationship between citizens and government. Finally, political voice increases the accountability of policy-makers, leading to better governance and thus better policies" (OECD 2011, p. 188).



Figure 7: "Using information, consultation and active participation, governments strengthen their relations with citizens" (OECD 2001, p. 17-18)

The OECD's guiding principles, although not specific to environmental governance, could still be applicable to matters concerning the environment and displays the organisation's efforts to promote good governance. The author has mentioned these principles in this subsection as they emphasise on the importance of public participation, and demonstrates the efforts made towards improving civic engagement in a reputable and influential international organisation.

3.2.4. *Findings and Research Working Definitions*

As previously mentioned, there is no single and exhaustive definition for good governance, and through the author's review of literature as well as conceptual models above, there appears to be no universal definition of "good" and/or "effective" environmental governance either. Nevertheless, the author has noticed that various models and ideas of good environmental governance have been constructed to fit the needs and expectations of different countries, organisations, and regional cooperations. **It can hence be argued that the absence of a universal definition for such a term may provide room for diverse ideas associated with it to be explored and experimented, which may lead it to being accepted and implemented, especially in the case of developing countries that may still perceive environmental sustainability as a hindrance to economic growth specifically, and to development in general.** The author thus believes that if environmental governance is to be "good" and/or "effective" at national level, the scenario of missing an agreed

definition could present an opportunity for the concept to be tailor-made according to each country's unique social, cultural, and economic context, and may thus have a better chance of being successfully implemented.

That said, as a result of researching and analysing the various definitions and models of "good" and/or "effective" environmental governance**, the working definitions that the author has created for good environmental governance in the context of Malaysia and under the focus of the selected research topic, encompass, but are not limited, to the following criteria**:

1. *Availability and active dissemination of environmental information that can be easily accessed and comprehended by the general population.*
2. *Inclusion and active participation of the public in both formal and informal avenues for environmental decision-making.*
3. *Implementation of laws, programmes and initiatives that foster an environmentally educated, encultured, ethical and informed citizenry.*
4. *Implementation of laws, programmes and initiatives that lead to the positive transformation of Government into one that is more open, inclusive, responsible and accountable.*
5. *Continuous improvement of environmental legislation, supported by efficient enforcement mechanisms as well as balanced and appropriate punishment of those who breach the laws.*

6. *Availability of avenues for all (be they organisations or individuals) to seek judicial remedy, as a result of the environmental problems caused by those who breach the laws and adversely affect the environment.*
7. *Creation of innovative methods for engaging with the public on environmental issues and decision-making procedures.*
8. *Opportunities for training and capacity-building on environmental problem-solving and public engagement made available for civil servants and other Government bodies, but also for corporations, civil society, and academia (preferably through collaboration among all these sectors).*
9. *Raising of funds and sufficient allocation of budget for enhancing programmes, infrastructure, tools, and mechanisms of environmental governance.*

Due to the scope and limitations of this research, the author will not delve further into the meanings and principles of good environmental governance. Nevertheless, the author would like to point out that despite the absence of a universal definition for good environmental governance, the conceptual models that were analysed in the last pages do reveal some of the shared characteristics and expectations associated with the term. Indeed, there has been a **consistent emphasis and mutual agreement** on the necessity of citizen engagement through providing **access to information** (sometimes referred to as transparency), **public participation**, and **judicial remedy**. These three

“requirements” can be considered fundamental components in managing environmental concerns and if carefully fostered, they may not only lead to establishing good environmental governance, but could also have the potential to empower citizens and possibly advance environmental citizenship.

The three crucial components have been recognized as “rights” by some organisations and countries (such as among member states of the United Nations Economic Commission for Europe or UNECE), and currently form the basis of Principle 10 of the Rio Declaration on Environment and Development as well as the Aarhus Convention. In fact, the Almaty Guidelines on Promoting the Application of the Principles of the Aarhus Convention in International Forums (Almaty Guidelines) are “based on the belief that access to information, public participation and access to justice in environmental matters are fundamental elements of **good governance** [emphasis added] at all levels, **essential for sustainability and generally improve the quality of decision-making and the implementation of decisions** [emphasis added]” (Ebbesson et al. 2013, p. 62).

3.3 ENVIRONMENTAL ACCESS RIGHTS

3.3.1. *Linking Human Rights, Democracy and the Environment*

The 1972 Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration)[48] explicitly states:

> "Man is both creature and moulder of his environment, which gives him physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth…Both aspects of man's environment, the natural and the man-made, are essential to his well-being and to the enjoyment of basic human rights and the right to life itself" (UNEP 1972).

Similar acknowledgements of the relationship between human rights and the environment are found in the Brundtland Report[49] of 1987, the Rio Declaration on Environment and Development[50] of 1992, the Draft Declaration of

[48] The Stockholm Declaration is the outcome of the first global environmental conference held by the United Nations in 1972. According to Handl (2012), "Stockholm represented a first taking stock of the global human impact on the environment, an attempt at forging a basic common outlook on how to address the challenge of preserving and enhancing the human environment". The Stockholm Declaration thus proposes some broad environmental policy goals and objectives, but was indeed influential in raising global awareness of environmental issues as well as international environmental law-making (Handl 2012).

[49] The report is entitled "Our Common Future", but is generally known as the "Brundtland report", named after Gro Harlem Brundtland, Norway's former Prime Minister, who was Chairman of the World Commission on Environment and Development 1987 (WCED), also known as the Brundtland Commission. In the report, which was the outcome of the Commission, **sustainable development** was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1987).

[50] Principle 1 of the Rio Declaration proclaims that human beings are "entitled to a healthy and productive life in harmony with nature" (UNEP 1992). Refer to the following link: http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=78&ArticleID=1163 [Accessed 16 January 2013]

Principles on Human Rights and the Environment[51] of 1994, and the UN Millennium Declaration of 2000[52]. Although the environment is not specifically mentioned in the Universal Declaration of Human Rights, it is understood to be an essential pre-requisite to a secure and healthy life[53]. The notions of security, safety and protection have indeed been repeatedly observed in literature concerning environmental rights, which underscores the importance of having a sense of trust. MacDonald's (now Makuch) (2006) definition of environmental rights, for example, includes the safeguarding of environmental standards: "environmental rights are those rights related to environmental standards or protection that are safeguarded so as to benefit someone or something. That someone or something could be the environment itself, humans or combinations

[51] The 1994 Draft Declaration of Principles on Human Rights and the Environment is the first international instrument that comprehensively addresses the linkage between human rights and the environment. The principles set out in the Draft Declaration build upon the rights found in both national and international law. It reflects the environmental dimension of established human rights, such as the rights to life, health and culture and also describes the procedural rights, such as the right to participation (International Group of Experts on Human Rights and the Environment 1994). A digital version of the Draft Declaration is available at <http://www1.umn.edu/humanrts/instree/1994-dec.htm> [Accessed 10 January 2013]. Additionally, the Right to Environment initiative mentions, "Although this instrument is non-binding legally, national courts have used the Draft Declaration as a basis for decisions on environment matters and have found legal support in the Draft Declaration in deciding in favour for the protection of the fundamental right to a healthy environment" (2013).
Refer to http://www.righttoenvironment.org/default.asp?pid=83 [Accessed 16 January 2013].

[52] Under Article IV: Protecting Our Common Environment, "We must spare no effort to free all of humanity, and above all our children and grandchildren, from the threat of living on a planet irredeemably spoilt by human activities, and whose resources would no longer be sufficient for their needs" (United Nations (UN) 2000). Refer to http://www.un.org/millennium/declaration/ares552e.htm. [Accessed 17 January 2013]

[53] The United Nations Office of the High Commissioner for Human Rights (OHCHR) recognizes the growing concern for environmental degradation, and thus explains that there is a clear abuse of human rights when, for example, a party deliberately dumps toxic waste into a community. Hence, although the Universal Declaration of Human Rights does not state the environment, the OHCHR affirms that "In no other area is it so clear that the actions of nations, communities, businesses and individuals can so dramatically affect the rights of others - because damaging the environment can damage the rights of people, near and far, to a secure and healthy life" (OHCHR 2013). Refer to:
http://www.ohchr.org/EN/UDHR/Pages/CrossCuttingThemes.aspx. [Accessed 15 April 2013]

thereof" (p. 7)[54]. Although this research does not intend to delve into definitions of environmental rights[55], it is nonetheless vital to acknowledge that human rights must be observed and respected in environmental decision-making and the processes involved in implementing environmental policies. There is a need for governments to be transparent and honest, and for people to be informed and have a sense of responsibility, so that they may participate effectively in solving environmental problems together. In support of this argument, a report of the United Nations Secretary-General's High-Level Panel on Global Sustainability states, "The truth is that sustainable development is fundamentally a question of people's opportunities to influence their future, claim their rights and voice their concerns. Democratic governance and full respect for human rights are key prerequisites for empowering people to make sustainable choices" (UN 2012a, p. 10).

The term "environmental access rights" is also one that lacks a single or universal definition. In various sources of literature, the notions that it represents have been interchangeably labeled under other similar terms such as "environmental democracy", "access rights", "environmental rights", "procedural rights" or simply "participation". The concept is believed to have derived from Principle 10 of the Rio Declaration on Environment and Development, and has

[54] Further information on the linkages between the environment, human rights and sustainable development (as well as children) by Karen Macdonald (Makuch) (2006) can be referred to through the following link: <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=994363> [Accessed 16 October 2012].

[55] Such as the definition adopted by Friends of the Earth International (FOEI), which describes environmental rights as "access to the unspoiled natural resources that enable survival, including land, shelter, food, water and air. They also include more purely ecological rights, including the right for a certain beetle to survive or the right for an individual to enjoy an unspoiled landscape" (Friends of the Earth International 2004, p. 1). This part of FOEI's definition takes on a more ecological approach. More details on this type of definition by the FOEI can be referred to via the following link: <www.foei.org/wp-content/uploads/.../our-environment-our-rights.pdf> [Accessed 12 February 2013].

also been perceived as the common ground that is shared between three movements, which have been steadily rising in this era – the environmental or sustainability movement, the human rights movement, and the democracy movement as displayed in Figure 8 (Foti et al. 2008, p. 17).

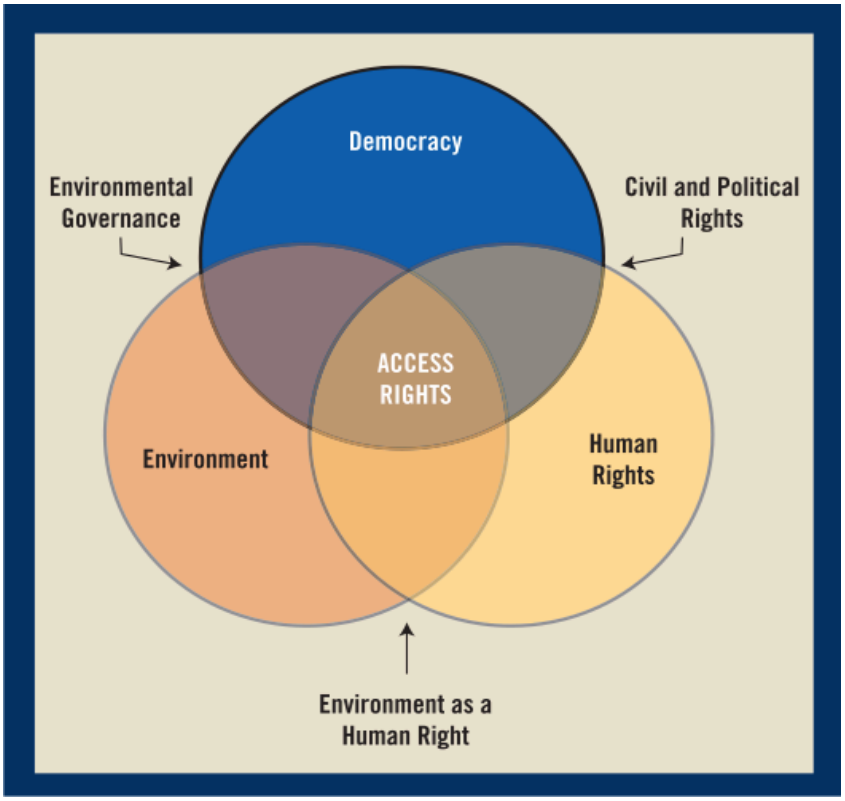


Figure 8: Traditions and Intersections of an Access Movement, according to The Access Initiative (TAI) of the World Resources Institute (Foti et al. 2008)

The constant debates surrounding the interlinked relationships between human rights, democracy and the environment have resulted in an array of definitions that are presented in the form of the abovementioned terms. Some of the definitions seem to overlap one another, while others refer to a completely different set of concepts. For example, Friends of the Earth refers to "access" in the context of environmental rights as having access to land and natural resources while "environmental rights" is referred to by Harvard Law School's Science and Environmental Health Network (SEHN) as having a right to a clean and ecologically healthy environment such as unpolluted water and air (2008, p. 10)[56]. The use of the terms "access" and "rights" in this research, however, will not refer to the abovementioned examples (i.e. having access or rights to the physical environment itself). Instead, **the scope and definitions that are being adopted in this thesis relate to the pillars under Principle 10 of the Rio Declaration on Environment and Development (1992), and the Aarhus Convention (1998)**.

[56] "Present and future generations of citizens of the State have the right to an ecologically healthy environment. This right includes but is not limited to: the enjoyment of clean air, pure water, and scenic lands; freedom from unwanted exposure to toxic chemicals and other contaminants; and a secure climate" (SEHN 2008, p. 10).

3.3.2. *The Pillars of Principle 10 and the Aarhus Convention*

Under the Rio Declaration on Environment and Development (UNEP 1992), Principle 10 urges Governments to provide environmental access rights to citizens. The pillars under Principle 10 (and in the legally binding Aarhus Convention) are as follows:

Pillar I: Access to (environmental) information

Pillar II: Participation in (environmental) decision-making

Pillar III: Access to justice (in environmental matters)

The Aarhus Convention places the three pillars in the above order. This may perhaps be due to the fact that providing access to information is regarded as the least difficult form of implementation, followed by participation in decision-making, and lastly access to justice, which is considered the most complex and costly element to address and implement. In the Aarhus Convention Implementation Guide, Ebbesson et al. (2013) provides a brief explanation on why access to information was placed as the first pillar: “It is fitting that it comes first in the Convention, since effective public participation in decision-making depends on full, accurate, up-to-date information. However, it is equally important in its own right, in the sense that the public may seek access to information for any number of purposes, not just to participate” (p. 6).

Regardless of the order in which they are listed, all pillars are treated as equally important as they are interconnected and depend upon one another in

order to effectively establish and implement environmental access rights. A continuous reminder of the supportive relationship between the three pillars was made apparent in the Aarhus Convention Implementation Guide (Ebbesson et al. 2013) through the following statements:

- "The environmental rights outlined in its preamble depend on the public having access to environmental information, just as they also depend on public participation and on access to justice" (p. 67).
- "Public participation cannot be effective without access to information, as provided under the first pillar, nor without the possibility of enforcement, through access to justice under the third pillar" (p. 115).
- "[The access to justice pillar] helps to enforce both the information pillar (specifically, article 4 concerning information requests) and the public participation pillar (specifically, article 6 on public participation in decisions on specific activities) in domestic legal systems, as well as any other provisions of the Convention that Parties specify in their domestic law to be enforced in this manner" (p. 7).

Therefore, while each pillar provides an approach to addressing environmental problems, it would be more effective if all pillars were implemented collectively, as they could function to support one another. In other words, citizens may not be able to participate meaningfully in the decision-making process if they are not given access to relevant information, and at the same time, they would need the rule of law to support their right to access information

so that they may acquire the knowledge needed to bring justice to the environment (and themselves). Figure 9 shows a representation of the equal and interlinked relationship between the three pillars that provides the foundation for environmental access rights. However, due to the scope and limitations of this research, the focus of this thesis will be placed on exploring the first two pillars of environmental access rights in the Malaysian context.

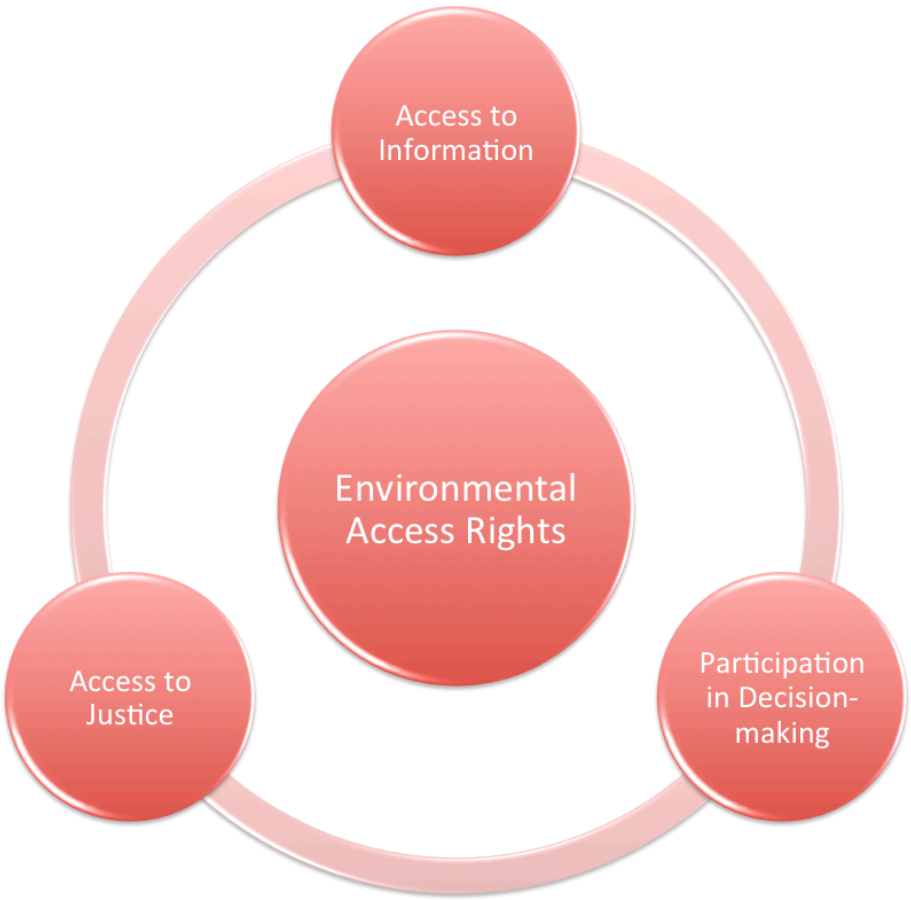


Figure 9: The interconnection between the three pillars of Environmental Access Rights

As previously mentioned, Principle 10 may be considered as part of customary international law. For instance, Günther Handl (2012) opines,

> "Although Principle 10 has some antecedents in, for example, the work of the Organization of Economic Co-operation and Development, it nevertheless represents a trail blazer, laying down for the first time, at a global level, a concept that is critical both to effective environmental management and democratic governance. Since then, international community expectations, as reflected notably in the [Aarhus Convention], the 2010 [Bali Guidelines] and various resolutions of international organizations and conferences, have coalesced to the point where the normative provisions of Principle 10 must be deemed legally binding" (p. 6).

Indeed, the author would also argue that the normative status of Principle 10 is reflected in the choice of words that are used to construct it. As displayed and reiterated in Chapter 1, the opening sentence of Principle 10 is as follows: "Environmental issues are **best handled** [emphasis added] with participation…". The use of the word "best handled" appears to strongly suggest that the international community (i.e. the UN as a global multilateral institution and all the States that signed the Rio Declaration, under which Principle 10 belongs), have acknowledged and agreed, through formal processes of consideration and

deliberation, that environmental issues are ideally or **ought** to be managed with what the Principle recommends under its pillars. In this regard, although Principle 10 is part of a non-legal document, its provisions are considered ideal or "ought to be" as an internationally-accepted normative standard for "handling" environmental issues, which may indicate that the pillars under Principle 10 could form a part of customary international law.

David Ong (1999) explains that besides evidence of state practice, another imperative in the formation of customary international law is the "psychological or subjective element of acceptance of the obligation as binding in law" (p. 788). Ong also believes that "even if practice is not widespread or general, it may still give rise to a local or regional custom" (1999, p, 793). Apart from the way in which it is worded, Principle 10 has great potential to become influential in shaping cultural norms related to environmental matters and accepted as a legal obligation, as evidenced by the adoption of the pillars in the Aarhus Convention, which has influenced the ways in which environmental matters are approached and addressed, not just by the States that are parties to the Convention, but also by other countries around the world. Examples of this increasing influence could be witnessed in the signing of the "Declaration on the Application of Principle 10 of the Rio Declaration on Environment and Development" by Latin American and Caribbean (LAC) countries at the Rio+20 Conference in 2012 (United Nations Economic Commission for Latin America and the Caribbean (ECLAC) 2016), and also the publication of a brochure introduced by a collaboration of Japanese researchers and Japanese environmental organisations entitled "Let's Achieve

the Principles of the Aarhus Convention in Japan!" (Green Access Project 2012)[57].

3.3.3. *Access to Environmental Information and Public Participation in Environmental Decision-Making*

In this research, the author will focus on exploring the first two pillars of environmental access rights in the Malaysian context, which are **1) Access to environmental information, and 2) Public participation in environmental decision-making.** However, before doing so, it is essential to understand what the terms that represent the pillars signify, and how they function to promote good environmental governance.

As mentioned, there is an array of definitions used to describe the pillars that form the basis of environmental access rights. In Table 2, the author provides a brief compilation of some definitions and descriptions of access to environmental information and public participation in environmental decision-making that are stated by various organisations including think tanks, NGOs, international institutions, and supranational organisations as well as cooperation. As these organisations have published many reports, books, and other forms of informative documents (including digital versions), the sources of their

[57] The colourful brochure in available online and displayed in the UNECE publications website, but the current version is only available in Japanese, most likely because its target audience are citizens of Japan. Nevertheless, the format and visual construct of the brochure could still be viewed by non-Japanese speakers to obtain a better understanding of how it was created to cater to the Japanese people and culture. The brochure can be downloaded at the following link: <http://www.unece.org/index.php?id=32375> (Green Access Project 2012) [Accessed 27 Sept 2016]. More information on the Green Access Project can be viewed through the following link: <http://greenaccess.law.osaka-u.ac.jp/english> (Osaka University Graduate School of Law 2016) [Accessed 27 Sept 2016].

statements are provided in the last column of the table, including the year and form in which it was found by the author, for ease of reference. Table 2 begins in the next page.

Upon analysis of the compendium of definitions and descriptions, those provided under the **UNECE's Aarhus Convention Implementation Guide** were selected as the preferred definitions to refer to in this research, as a way of standardising all references to access-related terms made throughout this thesis. The author decided to adopt the UNECE's definitions in this thesis, as they were believed to be the most comprehensive, succinct, and simply easy to understand. The UNECE's definitions have also been elaborated in a legally binding document (i.e. the Aarhus Convention), and are sufficiently detailed in specifying what the terms refer to, how they should be implemented, and exceptions to access that might be applied by authorities.

Table 2: DEFINITIONS & DESCRIPTIONS OF ACCESS TO INFORMATION & PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING

ORGANISATION	ACCESS TO INFORMATION	PARTICIPATION IN DECISION-MAKING	SOURCE
UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UNECE)	• Access to "environmental information" include the state of the elements of the environment, factors that affect the environment, decision-making processes and the state of human health and safety (Ebbesson et al. 2013, p. 67). • General right of the public to gain access to existing information upon request, also known as "passive" access to information (Ibid). • Duties of the Government to collect and disseminate information on its own initiative, also known as "active" access to information (Ibid).	• Public participation involves the activity of members of the public in partnership with public authorities to reach an optimal result in decision-making and policymaking (Ebbesson et al. 2013, p. 115). • There is no set formula for public participation, but at a minimum it requires effective notice, adequate information, proper procedures and appropriately taking account of the outcome of the public participation (Ibid).	*The Aarhus Convention: An Implementation Guide* (Ebbesson et al. 2013) (Digital book)

WORLD RESOURCES INSTITUTE (WRI) & THE ACCESS INITIATIVE (TAI)	• Access to Information is defined as the ability of citizens to obtain environmental information in the possession of public authorities. "Environmental information" includes information about air and water quality, for example, and information about whether any hazardous chemicals are stored at a nearby factory (Dresang & Gosling 1999 cited in Petkova et al. 2002, p. 15). • [E]nables citizens to make informed personal choices and encourages improved environmental performance by industry and government (Petkova et al. 2002, p. 1). • Information in the public domain should include information about environmental quality and impacts on health, factors that influence it, information about legislation and policy, and advice about how to get information (Petkova et al. 2002, p. 18).	• Access to Participation is defined as the opportunity for citizens to provide informed, timely, and meaningful input and influence decisions on general policies, strategies, and plans at various levels and on individual projects that have environmental impacts. Individuals may, for example, engage in electoral processes, testify at hearings and meetings, serve on advisory committees, have direct contact with public officials, express views and opinions through the media, or engage in some form of protest action (Dresang & Gosling 1999 cited in Petkova et al. 2002, p. 15). • [A] mechanism to integrate citizens' concerns and knowledge into public policy decisions that affect the environment. Decisions that incorporate public input generally result in outcomes that are more effective and environmentally sustain- able than those that do not (Petkova et al. 2002, p. 1). • Mechanisms for public input into national sectoral policies, strategies, and plans […], into sub-national (regional, state or local) decision-making, especially land-use planning [and] into project-level decisions. (Petkova et al. 2002, p. 18)	*Closing The Gap: Information, Participation, And Justice In Decision-Making For The Environment* (Petkova et al. 2002) (Digital report)

CONVENTION ON BIOLOGICAL DIVERSITY (CBD) SECRETARIAT	• Principle 11: The ecosystem approach should consider all forms of relevant information, including scientific and indigenous and local knowledge, innovations and practices (Convention on Biological Diversity Secretariat 2014). • Information from all sources is critical to arriving at effective ecosystem management strategies. A much better knowledge of ecosystem functions and the impact of human use is desirable. All relevant information from any concerned area should be shared with all stakeholders and actors, taking into account, inter alia, any decision to be taken under Article 8(j) of the Convention on Biological Diversity. Assumptions behind proposed management decisions should be made explicit and checked against available knowledge and views of stakeholders (Ibid).	• Principle 12: The ecosystem approach should involve all relevant sectors of society and scientific disciplines (Convention on Biological Diversity Secretariat 2014). • Most problems of biological-diversity management are complex, with many interactions, side-effects and implications, and therefore should involve the necessary expertise and stakeholders at the local, national, regional and international level, as appropriate (Ibid).	Principles of the Ecosystem Approach[58] (Convention on Biological Diversity Secretariat n.d.) (Webpage)

[58] The webpage can be accessed at <https://www.cbd.int/ecosystem/principles.shtml> [Accessed on 17 January 2014].

WORLD WILDLIFE FUND (WWF)	• Fundamental prerequisites of a democratic society built on the principles of transparency, participation and justice (Day 2011)		*Tackling Barriers to Environmental Justice* (Day 2011) (Conference paper)
FRIENDS OF THE EARTH	• People have the right to play an active role in protecting their environments, and access to information is key to securing this right (Friends of the Earth 2008).	• The right to decide is crucial to people's self-determination, a fundamental principle in human rights law that holds that people can "freely determine their political status and freely pursue their economic, social and cultural development" (UN International Covenant on Civil and Political Rights cited in Friends of the Earth 2008). • The principle of free, prior and informed consent requires securing the consensus of all members of a group to a project within their area (Friends of the Earth 2008).	*Right to Know Handbook* (Friends of the Earth 2008) (Digital book)

INTERNATIONAL UNION FOR CONSERVATION OF NATURE (IUCN)	• Can be defined as the freedom to seek information (narrow definition) or as the right to access or even receive it (broader definition). In turn, the State can either have the duty to abstain from interfering with efforts to obtain information or the obligation to disseminate all relevant information (IUCN 2013).	• Refers to Principle 23 of the World Charter of Nature (28 October 1982), which provides that "All persons, in accordance with their national legislation, shall have the opportunity to participate, individually or with others, in the formulation of decisions of direct concern to their environment, and shall have access to means of redress when their environment has suffered damage or degradation" (IUCN 2013). • Refers to Article 4 (1) (i) of the United Nation´s Framework Convention on Climate Change that encourages "the widest participation in this process" (Ibid).	Portal on Rights Based Approach to Conservation (IUCN RBA Portal)[59] (Website)

[59] The IUCN RBA Portal, which the author was previously able to access in 2013 through the following link: <https://community.iucn.org/rba1/Pages/Substantive%20and%20procedural%20rights.aspx#Question2> [Accessed 12 July 2013] appears to be unavailable for unknown reasons as at 8 August 2014. The author has since made attempts to access the portal again through other links such as <https://community.iucn.org/rba1/default.aspx> in 2015 and <http://www.rights-based-approach.org/> in 2016, but they all appear to be broken links. Nevertheless, the author has decided to retain the information that was previously extracted from the RBA Portal in the above table as it is valuable to inform and enrich this research. The author is unsure as to whether the links or portal will be accessible again in the near future but at the very least, this thesis will hold a piece of information from the portal and the links provided may be later accessible for others to refer to. That said, information regarding what the RBA portal can still be referred to through the following links: <http://www.iucn.org/news_homepage/news_by_date/2010_news/august_2010/?5839/Join-the-Rights-Based-Approach-to-Conservation-Portal> (IUCN 2010b) [Accessed 8 August 2014], and <http://www.iucn.org/news_homepage/news_by_date/?6156/Interactive-Portal-on-Rights-Based-Approaches-to-Conservation> (IUCN 2010a) [Accessed 8 August 2014].

COMMONWEALTH SECRETARIAT	• Through having access to information about environmental impacts, greater transparency is brought to the environmental decision-making process. (Cruickshank et al. 2012, p. 30)	• Through access to participation, citizens can actively engage with decision-making through consultations and dialogue, and make constructive proposals so that planning and legislation better reflect their needs. (Cruickshank et al. 2012, p. 30)	*A Pocket Guide to Sustainable Development Governance* (Cruickshank et al. 2012) (Digital book)
THE WORLD BANK	• The link between sustainable development and access to environmental information is established in principle 10 of the Rio Declaration (a soft law instrument), which reinforces the principle of public access to environmental information in achieving sustainable development (Wang in Ahmed 2012, p. 118). • Environmental information generally refers to data held by public authorities that is generated by environmental legislation and measures at all levels of government (Wang in Ahmed 2012, p. 118).	• [P]ublic participation creates increased accountability for the policy makers…Furthermore, public participation strengthens democratic institutions by reducing the ability of vested interests to misrepresent their interests as those of the public at large (Loayza in Ahmed 2012, p. 37). • Meaningful public participation enables citizens to provide informed and timely input and ultimately influence decisions that affect their environment (Shaffer in Ahmed 2012, p. 268).	*Getting to Green: A Sourcebook of Pollution Management Policy Tools for Growth and Competitiveness*[60] (Ahmed 2012) (Digital working paper)

[60] This publication can be accessed and downloaded through the following link: <http://documents.worldbank.org/curated/en/2012/01/16565836/getting-green-sourcebook-pollution-management-policy-tools-growth-competitiveness> [Accessed 10 February, 2015]. The World Bank Group authorizes the use of this material subject to the terms and conditions on its website, <http://www.worldbank.org/terms>.

3.3.3.1. *Access to Environmental Information*

a. Clarifying the Term

Access to information has been described as "the oxygen of democracy" (Article 19 Organisation 1999, p. 1)[61]. It is oftentimes related to transparency and accountability, as seen in the various conceptual models of environmental governance discussed previously. The term appears to be straightforward in meaning i.e. it signifies the gaining or granting of access to information concerning or related to the environment, yet the meaning of "information" in this context can be vast, and hence the term can be interpreted in multiple ways. With regard to the environment, some people may limit their understanding of "environmental information" to weather forecasts, while others may imagine it to be a complete report on the state of the environment. As displayed in the above table, the Aarhus Convention Implementation Guide (Ebbesson et al. 2013) considers environmental information as encompassing a state of the elements of the environment, factors that affect the environment, decision-making processes and the state of human health and safety (p. 67). This type of information can also be referred to as "environmentally significant information". The Aarhus Convention provides a more detailed explanation of what such environmental information entails, under Article 2(3), which states the following:

[61] Article 19 is an organisation that works to defend the right to freedom of expression. The organisation took its name from the Universal Declaration of Human Rights. For more information, please refer to the following link: <https://www.article19.org/> [Accessed 5 August, 2013]. For the purpose of avoiding confusion in references to law and other discussions involving legal provisions in this thesis, the author will refer to this organisation as Article 19 Organisation.

"'Environmental information' means any information in written, visual, aural, electronic or any other material form on:

(a) The state of elements of the environment, such as air and atmosphere, water, soil, land, landscape and natural sites, biological diversity and its components, including genetically modified organisms, and the interaction among these elements;

(b) Factors, such as substances, energy, noise and radiation, and activities or measures, including administrative measures, environmental agreements, policies, legislation, plans and programmes, affecting or likely to affect the elements of the environment within the scope of subparagraph (a) above, and cost-benefit and other economic analyses and assumptions used in environmental decision-making;

(c) The state of human health and safety, conditions of human life, cultural sites and built structures, inasmuch as they are or may be affected by the state of the elements of the environment or, through these elements, by the factors, activities or measures referred to in subparagraph (b) above".

(UNECE 1998)

b. Active Provision of Environmental Information

Additional to this, the Aarhus Convention requires authorities to provide information to the public in situations that call urgent attention. The public authority that holds "all information, which could enable the public to take measures to prevent or mitigate harm arising" from any imminent threat to human health or the environment, has the responsibility to "immediately and without delay", disseminate such information to members of the public who may be affected (UNECE 1998, Article 5(1)(c)). The author considers such information to include, among others, a sudden increase detected in river water levels, the forecasting of an upcoming snow blizzard or hurricane, or findings of toxic elements from an industrial activity that have leaked into water sources.

Regardless of how environmental information is defined, Padman (2002) argues that it is essential for the public to be able to gain access to such information, as it is almost always related to their livelihoods: "Access to information may not always be linked to matters of death, but it is certainly connected to matters of daily life. Routine choices of citizens are reliant upon the accuracy, timeliness, quality, quantity and relevance of information released by custodians, in particular the government" (p. 1). Indeed, environmental information need not be made available only in times of emergency or when something harmful to human health is discovered to be present in the environment. **People should be able to obtain access to environmental information whenever they wish to do so, without needing to justify their reasons**.

Information, in this sense, can be "active" or "passive". The Aarhus Convention explains the importance of the two under Article 4, which discusses signatory parties' obligations to provide environmental information upon public request ("**passive**"), and Article 5, which calls for a more proactive state role in collecting and disseminating environmental information ("**active**") (UNECE 1998; Toth 2010, p. 299).

Access to environmental information is also believed to help Governments prevent misinformation or misunderstandings among citizens: "Where environmental risks are small, releasing relevant information to the public can help alleviate unfounded fears and stave off political risk" (Toth 2010, p. 298). Providing people with better access to information allows them to participate more effectively and make more informed decisions, while reducing instances of speculation and gossip. Based on the findings of The Access Initiative (TAI)[62], Foti et al. (2008) points out that "[a]ccess to information is essential in fostering meaningful public involvement. Without relevant and usable information, the public, officials, and companies are left to surmise what is reality from a mix of facts, innuendo, and hunches" (p. 43). While there can be legislation that serves

[62] The Access Initiative (TAI) began in 1999, and is a global network that promotes access to information, participation, and justice in environmental decision-making. Since it's inception, more than 150 civil society organisations have become TAI Partners, while governments in more than 45 countries have been engaged to improve their environmental access rights. TAI describes itself as "the world's largest network of civil society organisations dedicated to ensuring that local communities have the rights and abilities to gain access to information and to participate in decisions that affect their lives and their environment. Members from around the world carry out evidence-based advocacy to encourage collaboration and innovation that advances transparency, accountability, and inclusiveness in decisionmaking at all levels". For more information, please refer to the TAI website available at the following link: <http://www.accessinitiative.org/> (TAI 2012) [Accessed 18 September 2013].

to protect individual privacy and state secrets, restricting access to information may lead to secretive tendencies, which, according to Abu Bakar Munir and Siti Hajar Mohd Yasin (2009), is what "bad" governments depend on: "Secrecy […] is a breeding ground for corruption, abuse of power and mismanagement. It allows inefficiency, wastefulness and corruption to thrive. A bad government needs secrecy to survive" (p. 1). This is why access to information is regarded as the oxygen of democracy, as was mentioned earlier. Below, a description by Foti et al. (2008) regarding access to information that is effectively implemented perfectly depicts a vision of how it is meant to function in society, and the role of the Government as the custodian of public information:

> "In a society where every person had access to environmental information held by the government, each individual would be able to access that information in a timely and affordable manner. People would be aware of their right to information and would easily understand where to go, whom to meet, and how to get that information. Each agency would advertise to people the information it has and where, when, and how it could be obtained. Civil servants would see the public as the rightful owners of government-held information, as a key source of information, and an indispensable ally in informed decision-making. Government agencies would willingly bear a heavy burden of proof when asserting any duty or privilege of government secrecy, such as national security or public safety.

> Furthermore governments would mandate and support the production, analysis, and dissemination of information, and would build the capacity of the public to use that information" (Foti et al. 2008).

3.3.3.2. *Public Participation in Environmental Decision-making*

a. *An Opportunity to Express One's Voice*

In the context of environmental decision-making, public participation "takes place largely, although not exclusively, as a part of procedures to assess and to mitigate environmental harm, such as in preparation of environmental impact assessments, and through policy making and planning bodies such as legislatures and zoning boards" (Foti et al. 2008, p. xiii). The Aarhus Convention Implementation Guide states that public participation "involves the activity of members of the public in partnership with public authorities to reach an optimal result in decision-making and policymaking" (Ebbesson et al. 2013, p. 115). In the text of the Aarhus Convention, Articles 6, 7 and 8 addresses the pillar of public participation. The Convention links public participation strongly to the first pillar that is of access to information by underlining the responsibility of the authorities to provide information, where necessary, on the environmental matter of concern itself but also on the time, venue, procedures and opportunities for participation (UNECE 1998, Article 6). This is interesting to note as it displays the essential role of information in enabling the public to participate, and also the role of public authorities in providing information regarding available opportunities for

participation. In support of this, Article 7 of the Aarhus Convention (UNECE 1998) states that "[e]ach Party shall make appropriate practical and/or other provisions for the public to participate during the preparation of plans and programmes relating to the environment, within a transparent and fair framework, having provided the necessary information to the public".

Indeed, public participation allows the public to not only express their voice in environmental matters of concern, but it also provides decision-makers with an opportunity to listen and respond to these voices. According to Dellinger (2012), "[a]s a threshold matter, public participation in government decision making is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process" (p. 313). Dellinger also mentions that it is linked to good governance by stating that "public participation is widely considered not only a 'high mark' for environmental democracy, but also one of the fundamental elements of good governance in general" (p. 315). Fischer (2000) as well understands public participation as "deliberation on the pressing issues of concern to those affected by the decisions at issue" (p. 32).

As an example, the voices and opinions of global citizens were recorded in a preliminary report[63] by the United Nations, which managed to engage more than 200,000 people from 189 countries to join in a "global conversation" in efforts to address the world's development agenda post-2015. In the MY World

[63] "The World We Want" initiative (United Nations (UN) 2015) captures people's views using a combination of digital media, mobile phone applications, conferences, and paper ballot surveys. The full report can be downloaded at the following link:
<http://www.worldwewant2015.org/file/329346/download/357813> [Accessed 10 April 2014].

survey[64], "an honest and responsive government" was one of the issues that were voted as a top priority in making a difference to people's lives[65]. In addition, consultations identified three emerging priorities for the future development agenda. One of the three priorities listed in its press release mentioned the need to address challenges of environmental degradation, along with unemployment and violence[66] (United Nations Development Group 2013). These findings could be regarded as a snapshot of global trends towards a need for more inclusive and democratic processes of citizen participation. More importantly, the participatory methodology used in the surveys and collection of data adds significance to the idea of providing platforms where people are invited to voice opinions on matters that concern them, giving importance to the "global village" notion that a community's problems are also the world's problems.

Sherry Arnstein (1969) regards citizen participation as "citizen power" and describes it as "the redistribution of power that enables the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future…In short, it is the means by which they can induce significant social reform which enables them to share in the benefits of the affluent society" (p. 216). Learning from the examples of federal social programs

[64] According to the MY World 2015 blog, "MY World is an option based survey developed jointly by the UN Development Programme, the UN Millennium Campaign, the Worldwide Web Foundation and Overseas Development Institute, with strategic funding from DFID and the Government of Nigeria. The survey aims to encourage people´s participation in defining the next global development agenda by asking them to vote for the issues that would make the most difference to their lives" (United Nations (UN) 2013). For more information, refer to <http://blog.myworld2015.org/2013/05/15/my-world-survey-first-results-half-a-million-citizens-tell-the-united-nations-their-priorities/#more-368>
and <http://www.worldwewant2015.org> [Accessed 17 March 2013]

[65] According to its website, "MY World asks individuals which six of sixteen possible issues they think would make the most difference to their lives" using creative online and offline methods (United Nations (UN) n.d.). For more details, visit <http://www.worldwewant2015.org/the-global-conversation-begins> [Accessed 17 March 2013].

[66] Ibid

in the United States, Arnstein presents her “Ladder of Citizen Participation” (Figure 10, as below) that consists of eight rungs with three degrees of participation – one of which is considered as “non-participation”.

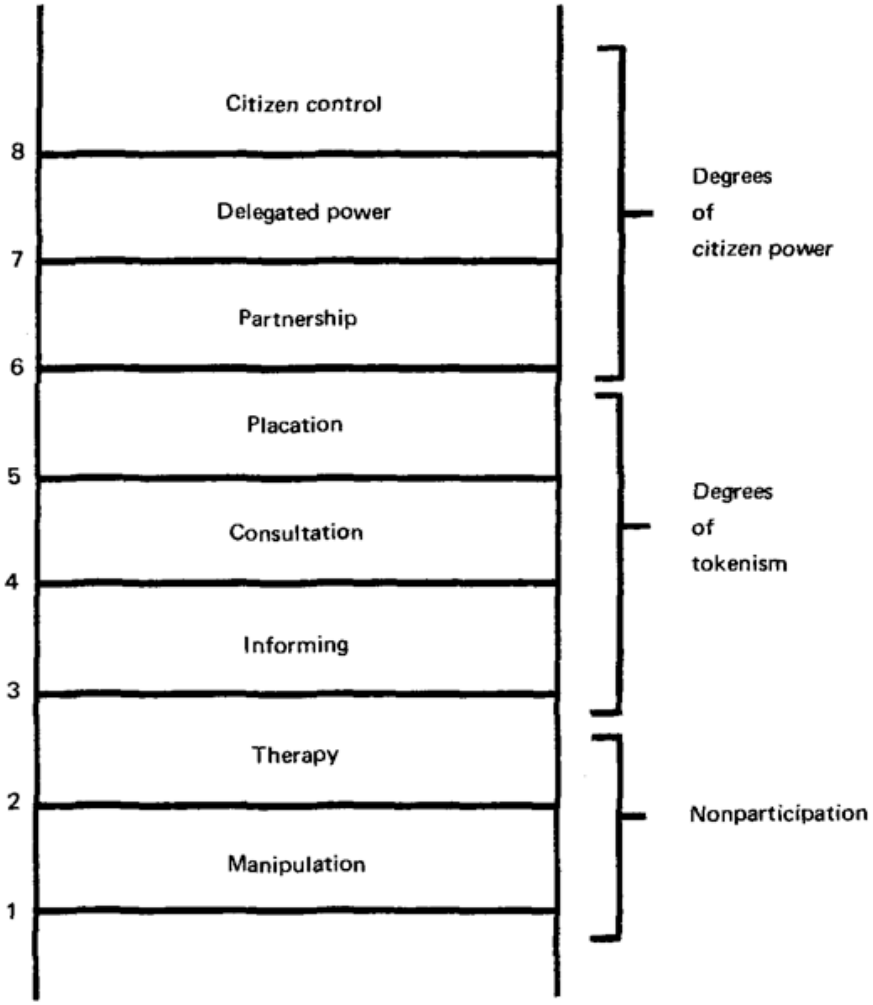


Figure 10: Eights Rungs on a Ladder of Citizen Participation, according to Arnstein (1969, p. 217)

The ladder is meant to illustrate the existence of significant gradations of citizen participation. To some extent, the author agrees with Arnstein that citizen or public participation can take places in several stages, and that there are groups of people in society who may not be given any opportunity to participate in a meaningful manner. Arnstein argues that “participation without redistribution

of power is an empty and frustrating process for the powerless. It allows the power-holders to claim that all sides were considered, but makes it possible for only some of those sides to benefit. It maintains the status quo" (1969, p. 216). Arnstein cautions that the ladder is indeed simplified, as there could be 150 rungs in the real world, with less sharp distinctions among them, and admits that the "have-nots" and the "power-holders" are not homogenous blocks (p. 217).

In this research, the author holds a differing opinion to Arnstein regarding the functions of citizen or public participation in that it is not viewed as a process that primarily bridges the gap between the "power-holders" and the "have-nots", the "nobodies" and the "somebodies" or the "powerless" and the "powerful", which are terms that were used by Arnstein to describe the actors involved in participation processes (1969, p. 217). Writing in 2015, 46 years after Arnstein, the author believes that members of the public can be in both states of being "powerless" and "powerful", especially in this day and age. For example, some citizens may not have much influence in the formal procedures that involve public participation because they were not consulted on a program or project that was being planned by authorities and perhaps decided behind closed doors. However, their voices can still be powerful when they post their opinions online or gather on the streets to protest the decision that was made. While such methods might not be regarded (by some) as a "proper" or formal way of participating in the decision-making process, it can still contribute to redistributing power as it provides the public with an alternative avenue for influencing the course of action on a decision, and should still be regarded as a form of participation.

Additionally, Arnstein's use of certain terms such as "somebodies" and "nobodies" appears to be subjective and ambiguous, because it is not clear whether the words are referring to "rich" and "poor" (i.e. distinguished by economic status or income), "educated" and "uneducated" (i.e. by level of formal education), "majority" and "minority" (i.e. by demographics of age, race, gender, nationality, etc.) or just simply "people who are allowed to participate" versus "people who are not allowed to participate", which could be a mix of any one or more of the above. In this regard, **the author opines that while public participation can indeed contribute to bridging inequalities, it can also be used, depending on the form of participation adopted, to create a platform for dialogue that addresses public concerns, to clarify information that may be otherwise misunderstood or misinformed, to deliberate on ideas for improvements by taking advantage of one another's skills and knowledge, to foster a culture of openness, and/or to simply be an opportunity for one to express one's voice and receive answers to one's questions, among others.**

Again, the experiences and outcomes of participation can depend on how it is carried out. Nevertheless, Foti et al. (2008) points out that capacity building can also occur as a result of participation in that engagement with a range of stakeholders can generate new knowledge for Government employees in their field or raise awareness of the broader context of their work, while the participants (i.e. the citizens or public) could develop skills, knowledge, and relationships built through the decision-making process or in some cases, simply

their familiarity with the decision itself (p. 30-31). Therefore, although the author acknowledges that in the real world, public participation may not be “perfect” in its modes and outcomes, the author disagrees (at least in the context of environmental decision-making) with the notion that its main function is to redistribute power so that the “have-nots” citizens can share in the benefits of the “affluent society”. While the author acknowledges that damage to the environment can affect some groups in society more than others (such as those who become victims to poverty or racism), the notion of public participation should not entirely revolve around “power distribution” but also highlight the various benefits it could bring to all members of society. Even those who are not involved in the decision-making process could benefit from the decisions made if the outcomes happen to support their livelihoods. That is, however, a separate topic of discussion that the author will not probe further in this research.

The Aarhus Convention (UNECE 1998) recommends public participation to be provided at the early stages of the decision-making process, “when all options are open and effective public participation can take place” (Article 6, paragraph 4). This provision recognises the importance of providing a suitable time-frame and sufficient opportunity for the public to get involved. Indeed, it reflects how the timing of public participation needs to be considered by policymakers, as the public should be provided with enough time to obtain information, process the knowledge gained from the information, and respond to what they now know. In addition, public participation could involve different forms of feedback and engagement, such as that reflected in Article 6, paragraph 7 of the Convention:

"Procedures for public participation shall allow the public to submit, in writing or, as appropriate, at a public hearing or inquiry with the applicant, any comments, information, analyses or opinions that it considers relevant to the proposed activity" (UNECE 1998).

b. *The Benefits of Public Participation*

In discussions on the importance of cooperation and communication across all levels of society, some critics may argue that laypersons do not possess enough knowledge, or are politically ignorant and oftentimes irrational, which can hinder effective participation in the decision-making process (Somin 2010, p. 258)[67]. In fact, the democratic theories of pluralism and direct participation[68] "require learning as a requirement of genuinely democratic participation" (Laird 1993, p. 353). Especially when dealing with participation in technically intensive issues, Laird (1993) notes that a commonplace observation about participation is that "a lack of knowledge will inhibit effective participation" and that this crucial role of knowledge suggests that "the learning process is central to participation in scientific and technological policy issues" (p. 353).

[67] Iyla Somin (2010), for example, argues that while deliberative democracy is an attractive idea, it is almost impossible to realise due to problems of political ignorance and irrationality, which are further exacerbated by the size and complexity of modern government. Somin believes that most voters are "often ignorant even of very basic political information" (p. 258) and that voter knowledge cannot be raised to a level that is sufficient to meet the demands of deliberative democracy, which Somin argues has given much emphasis on high degree of voter knowledge and sophistication (p. 272).

[68] According to Frank N. Laird (1993), "pluralism is a theory of democracy based on the actions of organized voluntary interest groups. Citizens are assumed to join and support groups to further their interests, and democratic governance is the free and successful functioning of these groups and their interaction with each other and with the government. Direct participation, in contrast, is premised on the notion that democratic governance includes the full participation of individuals as individuals in setting policy". Laird further notes that both theories require "for a properly functioning democracy, that citizens participate in shaping policies in ways that go beyond merely voting for officials and leaving the rest to elite politics and administrative state" (p. 343).

Though such arguments may hold some truth, other authors have highlighted that the process of public participation in itself can lead to a sense of ownership in the final decision made. Sarangi (2012), for example, observes the "quiet revolution" in governance that has been taking place in the Republic of India, claiming that "[w]hen citizens engage in public deliberation, the policy decisions that result enjoy greater legitimacy, and the polity's democratic character is enhanced. Citizens will be more likely to grasp the reasoning and interests behind a decision, and officials will benefit from a type of 'feedback' between elections that is more frequent and more information-rich than the plain verdict of the ballot box" (p. 149). Other than to obtain buy-in from the people and legitimacy on decisions made, Fischer (2000) asserts that while there is "a great deal of ignorance in the general public", there are many citizens who are much more intelligent than the stereotypes of them generally suggest and that experts are not devoid of making "bad" decisions either (p. 32). According to Fischer (2000), "[w]ith respect to the experts, their advice and conduct have seldom been as enlightening and virtuous as their professional ideologies would have us believe. In fact, they have supplied few unassailable answers to our pressing problems. At times their solutions have even turned problems into much bigger ones" (p. 32). This point of view alludes to the need for diversity in opinions, knowledge, and experience in the process of environmental decision-making as **not all the best solutions or ideas necessarily originate from the minds of experts**.

An article in *New Scientist* by Fred Pearce (2014) reported that local people can preserve the environment better than governments. In the article, David Kaimowitz of the Ford Foundation (in Pearce 2014), states that "'[m]any people think if governments give communities rights to forests they will just cut them down…But the evidence shows that community control is usually the best way to conserve those forests". Spyke (1999) also lends support to the argument that participation produces diverse viewpoints, which can be helpful in the decision-making process: "Widespread participation exposes decisionmakers to a healthy mix of perspectives, which is believed to improve the decisionmaking process. Even though one viewpoint must ultimately prevail over all others, the democratic process fosters inclusiveness, and may even result in a redistribution of power if those in control yield to the public's desires" (p. 267-268). Again, the idea here is that environmental decision-making should not only be formulated and executed by a selected group of experts, but **should be inclusive and participatory**.

As stressed by Makuch and Pereira (2012), "the course of environmental law and policy cannot be defined only by science. Indeed, defining the level of environmental protection is a function of many considerations and factors, and includes the concerns of other experts (e.g. economists, lawyers), regulators, corporations, lobbyist groups and lay people with no background in science" (p. 6). **Even when opinions of individuals are rejected or disagreed upon, what remains important in public participation processes is for people to feel that they were consulted and given an opportunity to be heard.** With

reference to Bernstein's (2004) view, "transparency, participation, accountability in rule-making, and adequate resources to enable participation produce a sense of 'ownership', which links decision-making and outcomes of a governance scheme to the communities that authorize it, and over which it is granted authority" (p. 163).

Table 3 (displayed in the next page) provides a summarised overview of the main functions of access to environmental information and public participation in environmental decision-making, for civil society and for governments. The table was originally adopted from Foti et al. (2008, p. xvii), and later adapted by the author to align with the scope of the research topic.

Table 3: MAIN FUNCTIONS OF ACCESS

	ACCESS TO (GOVERNMENT-HELD) ENVIRONMENTAL INFORMATION	PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING
CIVIL SOCIETY	• To monitor government and private activity through information collected by the government. • To assess and formulate policies and practices. • To educate the public about existing policies and practices.	• To increase influence of civil society organisations. • To ensure fairness of decisions. • To foster greater voice and equity for underrepresented groups. • To provide variety of viewpoints.
GOVERNMENT	• To share responsibility for monitoring with civil society. • To monitor fiscal expenditure. • To monitor and analyse management practice. • To set taxation rates and account for natural resource use. • To assess current practice. • To oversee other government agencies.	• To gather information from the public. • To disseminate information and educate the public. • To disseminate and influence public opinion. • To increase legitimacy. • To respond to public pressure. • To generate and capture wider ideas. • To amplify minority voices.

3.4 POTENTIAL FOR GLOBAL AND NATIONAL INFLUENCE OF PRINCIPLE 10 AND THE AARHUS CONVENTION

According to de Silva & Wates (2012), "the subsequent informal negotiations on the zero draft[69] in January and March 2012 in New York, all governments appeared to be agreed that Principle 10 plays a central role in sustainable development which should be open, inclusive and accountable" (p. 2). While de Silva and Wates discuss the possibilities of establishing a Principle 10 Convention, the global manifestation of Principle 10 that is already in effect today was adopted by the UNECE on 25 June, 1998 at the Fourth Ministerial Conference in the 'Environment for Europe' process in Aarhus, Denmark (UNECE 2012).

The Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, also known as the Aarhus Convention (1998), entered into force on 30 October, 2001 and is considered to be a unique international agreement as it integrates human rights with environmental protection (Mason 2010, p. 10-11). The extraordinary adoption of the Kiev Protocol that entered into force in 2009 makes it the first legally binding international instrument that allows access to pollution inventory information (Mason 2010, p. 10-11). The Aarhus Convention is claimed by the UNECE to centre on government accountability, transparency and

[69] The "zero draft" of the outcome document was the preliminary text that was negotiated by UN member states before adoption of the final draft at the UN Conference on Sustainable Development (Rio+20). The zero draft was published in January 2012 can be viewed through the following link: http://www.uncsd2012.org/futurewewant.html (United Nations (UN) 2012c) [Accessed 10 March 2013]

responsiveness, which it does by granting the public rights and "imposes on Parties and public authorities obligations regarding access to information and public participation and access to justice" (UNECE 2012). Jeffery (2005) notes that the Aarhus Convention deals forcefully with governmental accountability, "as it grants the public rights of access to information and imposes obligations on public authorities to provide this information. Access to environmental information leads to a well-informed public, who are more able to question the actions of the government. These factors can then lead to more accountable environmental decision-making and greater potential for environmental justice" (p. 2).

Although the Convention was primarily produced by and for Europe[70], as apparent in the text of the Convention: "Convinced that the implementation of this Convention will contribute to strengthening democracy in the region of the United Nations Economic Commission for Europe (ECE)" (UNECE 1998, p. 2), it also states that it should be implemented by international standards[71]. Thus, it is interesting to note that the Aarhus Convention is open to accession by non-ECE countries, though it will be subject to approval of the Meeting of the Parties (UNECE 1998). Indeed, through the Convention's implementation guide, Kofi Annan stated that as the Convention would be open to accession by non-ECE countries, it has potential to function as a global framework that could strengthen

[70] A map that displays the countries that form the Parties to the Aarhus Convention and their dates of ratification is made available by the UNECE to view through the following link: <http://www.unece.org/env/pp/aarhus/map.html> (UNECE n.d.) [Accessed 8 August 2013].

[71] This was expressed throughout the text of the Convention (1998), such as the following: "Each Party shall promote the application of the principles of this Convention in international environmental decision-making processes and within the framework of international organizations in matters relating to the environment" (Article 3, General Provisions 7).

the people's environmental rights. He also added that it was "a timely occasion to examine the relevance of the Aarhus Convention as a possible model for strengthening the application of Principle 10 in other regions of the world" (Stec & Casey-Lefkowitz 2000, p. v). It is therefore possible for countries in other parts of the world to accede to the Aarhus Convention, and implement it according to their respective models of development.

A challenge, however, may arise in other countries' acceptance of the Convention's UNECE origins: "Whilst the Aarhus Convention does allow for the accession of non-UNECE States, any new members must be approved by the Conference of Parties of the Convention, which is viewed to be 'European-centric'. Furthermore, regional negotiation allows for more regional ownership over the process, and can overcome cultural and language barriers that are more prevalent on a global level" (Stoddart 2011, p. 20). Even UNECE countries that have signed and ratified the Aarhus Convention, which is seen as the global manifestation of Principle 10, have yet to perfectly integrate the Convention into frameworks of national legislation. Unfortunately, access to information and public participation in environmental decision-making have been unevenly implemented around the world and in some places, there is still a lack of laws and mechanisms that grant the public with the right to know and participate in environmental decision-making. While there has been an improvement in laws granting citizens greater access to information, and a commitment to better engagement, consultation and participation on environmental matters in many developed countries that have implemented Principle 10 of the Rio Declaration,

The Commonwealth Secretariat notes that “in practice, however, many of these laws exist on paper only. Efforts to enhance participation in decision-making in some cases are often top-down affairs that take place towards the end of a decision-making process, where the capacity to influence the outcome has been minimised” (Cruickshank et al. 2012, p. 30). Similarly, Bruch and King (2002) also find that “[m]any countries have issued broad statements or declarations of commitments to further access to information, public participation, and access to justice. However, these assertions are often undermined in practice” (p. 22). Nevertheless, great strides have been made and there have been some success stories, as Jerzy Jendrozka explains: “Countries that have decided to grant the public broad information and participation rights and consequential access to environmental justice have benefitted a lot from voluntary activities of their citizens willing to protect the environment” (Jendroska 2001, p. 153).

For a country like Malaysia, plans to “graduate” from the middle-income trap and to shift policy focus from environment to sustainability (Hezri & Dovers 2012, p. 281) could be realised through the co-benefits that may be produced as a result of upholding the core pillars of Principle 10, including the promotion of effective participation, transparency, trust in the Government, better cooperation and communication between all actors and sectors, as well as opportunities for deliberation. Through the guidance of Principle 10 and references to international best practices such as those set by the Aarhus Convention, efforts to enhance public access to environmental information and participation in environmental decision-making may prove to be fruitful for Malaysia. As the GEO 5 Report

states, “Principle 10 of the Rio Declaration on Environment and Development recognizes the importance of procedural environmental rights. For the past 20 years regional experience has demonstrated that such rights provide a basis for citizens to participate in safeguarding both human and environmental well-being” (UNEP 2012a, p. 459).

While social and economic co-benefits could potentially be gained through implementing the pillars of Principle 10, Malaysia’s signature to the Rio Declaration does not legally oblige the country to adopt and implement the Declaration’s principles. Nevertheless, David Ong (2010) mentions that “certain basic international obligations in relation to environmental protection have been included within the customary rules of international law which are generally applicable to all States” (in French 2010, p. 139). As a concept that promotes human rights and supports soft law instruments, the author believes that environmental access rights have the potential to be regarded as basic international obligation due to the presence and importance of such elements in international agreements (such as in Principle 10 of the Rio Declaration) and national laws (such as in the UK Environmental Information Regulations, implemented under the European Council Directive 2003/4/CE on public access to environmental information) (Information Commissioner’s Office (ICO) 2015b). Handl (2012) observes that “[w]hile the actual state of their realization domestically [may still] be a matter of concern […] **today the rights of access to information, public participation, and access to justice arguably represent established human rights** [emphasis added]” (p. 6).

Therefore, as an active player that has demonstrated considerable support towards promoting sustainable development at international level, as seen through Malaysia's signing and ratifying of various treaties, conventions and protocols related to sustainable development and environmental protection (Ministry of Foreign Affairs Malaysia 2016), it could be in the country's interest to enhance Principle 10 pillars as part of customary international law. Malaysia's active participation in international efforts to promote sustainable development could be regarded positively as it reflects the country's intention to establish principles of sustainable development as a normative standard. The next section provides an overview of literature and analysis concerning the current scenario in Malaysia in relation to the research topic.

3.5 THE MALAYSIAN SETTING

3.5.1. *Environmental issues in Malaysia*

Malaysia[72] is home to a rich abundance of wildlife species and is recognised as one of the world's seventeen megadiverse countries[73]. Its uniquely rich

[72] Malaysia is located in Southeast Asia and comprises nine states and two federal territories of Peninsula Malaya ("West Malaysia"), as well as the two East Malaysian states of Sabah and Sarawak on the island of Borneo. Malaysia's population was recorded to be at about 30 million as at mid-2014, according to live statistics provided by Worldometers (2014). Refer to http://www.worldometers.info/world-population/population-by-country/ for exact numbers.

[73] Megadiverse countries refer to the world's most biodiversity-rich countries. The countries identified are: United States of America, Mexico, Colombia, Ecuador, Peru, Venezuela, Brazil, Democratic Republic of Congo, South Africa, Madagascar, India, Malaysia, Indonesia, Philippines, Papua New Guinea, China, and Australia. Conservation International's President, Dr. Russell A. Mittermeier was reported to have said that "[j]ust as the G-7 countries concentrate a major portion of the world's economic wealth, the 17 Megadiversity Countries have within their borders more than two thirds of our planet's biological wealth, its biodiversity" (Conservation International 1998).
See http://www.conservation.org/documentaries/Pages/megadiversity.aspx and http://www.biodiversitya-z.org/areas/26 (Mittermeier et al. 1997) [Accessed 15 April 2013]

biodiversity of flora and fauna with more than 25,000 plant species can be found in a portion of the tropical rainforest belt known as West Malesia (Hezri & Dovers 2012, p. 277). Unfortunately, Malaysia continues to encounter serious environmental challenges, such as deforestation, haze, soil erosion, acid rain, improper waste disposal, and water pollution (Sham Sani 1993; UNESCAP 2012; Noor Zalina Mahmood 2000; Latifah et al. 2009; Global Environment Centre 2002).

Literature have also noted the physical[74] transformations that have occurred from the colonial period and continued throughout the post-independence era, which saw the rapid development of the country through the series of its Five-Year Plans. According to Sham Sani (1993), there was "a swift change from a highly lopsided economy which was heavily dependent on rubber and tin in the 1950s to a more diversified and industrialised economy" (p. 10). The change in development strategies and policies led to an impressively fast pace of economic growth but as "the basis for Malaysia's growth and development has been its relatively rich natural resource base, both renewable and non-renewable" (Sham Sani 1993, p. 29), this had led to detrimental effects on the environment. The rapid loss of rainforests have especially highlighted the connection between environmental issues and economic pursuit in the country (Hezri & Dovers 2012, p. 227; Sham Sani 1993, p. 29).

[74] Physical transformation here refers to the natural environment in Malaysia that has undergone visible changes due to the processes involved in development, including exploitation of natural resources. As noted by Hezri and Dovers (2012), "[t]he pursuit of socio-economic progress in Malaysia has been accompanied by an unprecedented rate of change in the natural environment" (p. 277).

3.5.2. *Environmental legislation and policies in Malaysia*

Although the Federal Constitution of Malaysia does not contain the term "environment", Article 5(1) of the Constitution states: "No person shall be deprived of his life or personal liberty save in accordance with the law" (1957). In relation to this, Haliza Abdul Rahman (2010) explains that the provisions in the Federal Constitution that state the citizens' right to life can be interpreted also as the right to a healthy environment: "The Federal Constitution contains provisions that echo the most fundamental of rights as set out in the Universal Declaration – the right to life and liberty, equality before the law and equal protection of the law, freedom of movement, freedom of speech, assembly and association, freedom of religion, the right to education and possession of property. In this provision, the right to life can be described as the right of every citizen in Malaysia to live in the healthy and clean environment" (Haliza Abdul Rahman 2010).

Indeed, when referring to the state of the environment, there is a connection made to human health and livelihood, as apparent in the statement made by the Centre for Independent Journalism (CIJ) and the non-governmental organisation, Article 19: "In addition to its inherent harm, habitat loss and the unprecedented rapid change to Malaysia's natural ecosystems are also having an impact upon human life. Disasters due to mismanagement of hill slopes, such as the collapse of the Highland Towers condominium in 1993, concerns regarding water supply and quality due to river pollution and leakage, and the recurring problems of air pollution and haze are strong indicators that there is a need to reevaluate Malaysia's environmental strategy" (2007, p. 9).

The Government of Malaysia, through Vision 2020 and several progressive policies such as the National Policy on the Environment and the Climate Change Policy[75], have included environmental protection and conservation in the national agenda. There are approximately 46 environmental-related laws in Malaysia that are distributed among different Ministries and Departments (Sham Sani 1993; Kamariah Dola 2000). Nevertheless, governing environmental issues in the country continues to be riddled with challenges and there are deficits that exist in sharing of information and public participation. Azmi Sharom (2002) points this out in his analysis of Malaysia's National Policy on the Environment: "[A]s heartening and hopeful as this policy document is, in many aspects it still maintains the status quo. The environment is seen very clearly as second to development. Furthermore, perhaps more importantly, it is typically Malaysian as it is a paternalistic document placing almost all responsibilities regarding the environment in the hands of the government yet with no real statement on accountability or the empowerment of citizens. An important aspect of environmentalism, and that is the democratization of environmental decision making, is left unexplored" (p. 882).

3.5.3. *Malaysia's top-down approach in environmental decision-making*

What was mentioned above by Azmi Sharom suggests that environmental laws and policies in the country have often been implemented from a top-down approach, hence the public may have not been sufficiently informed on

[75] Further discussions and analysis of Malaysia's development plans and environmental policies will be elaborated later in another chapter.

environmental matters that could affect their wellbeing, nor are they being actively involved in the decision-making process. This lack of public involvement, however, also raises questions as to what extent are Malaysians themselves willing to proactively take part in environmental decision-making.

Dola (2000) discovered that generally, the Malaysian public "may participate in minimizing destruction to the environment legally through many ways…However, current findings show that these rights have not been fully utilized. The Malaysian public was regarded as passive when it comes to exercising their rights in development plans". Boyle (1998) and Ainul Jaria Maidin (2006) also mentions the cultural characteristics of the Malaysian people, explaining that the repression of emotions through silence and avoidance often occur as a means of maintaining smooth social relations, which they believe have influenced the effectiveness of environmental rules and regulations enforced in Malaysia[76]. Sham Sani (1993) suggests that attitudinal change in addition to increased levels of awareness in addressing environmental issues in the country are crucial, stating that "in view of the nature and extent of environmental degradation that exists today, a high and sophisticated awareness level is required to ensure the future of our environment. Furthermore, awareness alone is not likely to be very effective unless it is accompanied by attitudinal change and commitment to the environmental cause (p. 88).

Regardless, the Malaysian Government's top-down approach and strong focus on spurring economic growth have not helped to further the sustainability agenda, as development plans have tended to place more importance on raising

[76] The topic of cultural influences will be discussed further in Chapter 5.

the people's standard of living. This stance was apparent in Malaysia's intervention note at the first meeting of the Parties of Aarhus Convention that took place in Lucca, Italy, in which H.E. Ambassador Dato' Shamsudin Abdullah (2002) explained that with regard to public participation,

> "We believe that the convention may be well received and implemented when a society reaches a certain level of standard of living, a high level of education which lead towards a self sustaining and a heightened awareness of the need to protect and safeguard the environment. Our efforts must be focused to uplift the standard of living of our society to a level where they demand a cleaner and safe environment" (p. 2).

Such a statement reflects the policy stance of the Malaysian Government at the beginning of the millennium. However, over the years since then, the Government of Malaysia has, at the time this research began in 2012, appeared to show more willingness in accepting the notion of engaging with the public, encouraging citizen participation and welcoming the contribution of fresh and innovative ideas from the people, especially the youth. These were seen through the initiatives carried out in its transformation programmes, which attempt to move the Government towards becoming more citizen-centric, inclusive, and participatory. An explanation provided by the Performance Management and Delivery Unit of the Malaysian Prime Minister's Office (PEMANDU), states that "[a]s part of its approach, the [Government Transformation Programme (GTP)]

centres on getting committed buy-in from all stakeholders, from the rakyat[77] on the ground to the most senior Cabinet Ministers. All input will be considered, which is significantly different from the 'Government knows best' approach adopted in the past" (PEMANDU 2011).

While providing citizens with the right to a clean and healthy environment has yet to be listed down as one of the priority areas of the people's concern in the transformation agenda, such government initiatives offer hope for positive transitions and platforms for implementing policies and legislation that may provide Malaysians with improved access to environmental information as well as public participation in environmental decision-making. The transformation programme is, therefore, important to mention in this thesis, as the author believes that it adopts some key principles of good governance, and seems to advocate a citizen-centric approach towards development. It is also evidence-based and applies KPIs to ensure that the Government has a clear goal of achieving the country's objectives, while remaining flexible in its means of doing so (PEMANDU 2011). As the Third World Network (TWN) mentions, "Governance is also not just about coordination and synergies at the functional level. It is equally, if not more important, about decision-making power which is rooted in meaningful participation in an open, transparent and democratic manner" (2001, p. 17).

[77] *Rakyat* is a word from the Malay language (Bahasa Melayu) meaning "the people" or "citizens". Although it is commonly used in the local language, the author has observed a general increase of the use of the Malay word in speeches and official Government documents that were delivered in English. The widespread use of the term in this way may have originated from the Government's motto for its 1Malaysia campaign for unity - "*Rakyat didahulukan, Pencapaian diutamakan*" ("People first, performance now") that was introduced in 2009.

That said, it is also essential to note that even while efforts to change have appeared to be underway, the Government's responses to public concerns, including those involving environmental issues in Malaysia have tended to fluctuate and thus remain unpredictable. For example, despite promises to transform, Siddiquee (2013) reports that even in recent years:

> "[T]he administrative environment in Malaysia continues to suffer enduring centralism, a top-down approach to decision making, bureaucratic elitisms, politicization and a high incidence of corruption. Also, the lack of democratic decentralization and delegation of power means there is very little to no scope for people's participation at grassroots level. A further constraint is the prevailing administrative and political culture, which is dominated by ethnic identity and preference over merit and competence. It is argued that such policies and practices are a barrier to quality, productivity and an efficient public service. All this suggests that far more profound and comprehensive reforms are called for if the Malaysian system of administration is to resonate with the characteristics of 'good governance'" (p. 47).

Recent series of protests and criticisms against the Government appear to have further dimmed the light at the end of the tunnel (BBC 2015a; Jenkins

2016). Nevertheless, the author remains optimistic, and believes that Malaysia still holds potential to continue developing and improving in the area of access to information and public participation on environmental matters. Although economic growth still appears to be the top priority in Malaysia, it is hoped that the Government, together with citizens, will increasingly realise that other priorities, such as environmental sustainability and social stability, supported by notions of good governance, democracy, trust, solidarity, and inclusive civic engagement, are as important in ensuring the development of the country. As mentioned by Dellinger (2012), “Unless one fully trusts the democratic workings of traditional ‘top-down’ government rulemaking schemes, involving the public in decisions ultimately affecting everyone is preferable to the alternative” (p. 317).

3.6 CHAPTER SUMMARY

This chapter has provided a comprehensive review of literature and analysis surrounding the key areas of research as well as concepts that are central to the research topic. The main points that were highlighted in the chapter are as follows:

1. The state of global environmental governance has been fragmented, hence countries are advised to place more efforts on improving environmental governance nationally, which would be ultimately helpful in improving the global scenario as well.

2. The concept of “good environmental governance”, which can be regarded as a normative standard, is believed to stem from the notion of “good governance”, which has eight key characteristics. These characteristics are believed to be applicable to the context of the environment, hence the term “good environmental governance”. Through analysing various normative models of “good environmental governance”, it was noted that transparency, participation, and rule of law are commonly shared amongst these models, and are thought to be central to the effective implementation of good environmental governance at national level. These three elements also encompass the core pillars of Principle 10 – a soft law instrument of which Malaysia is a signatory, and the Aarhus Convention – a legally binding multilateral agreement to which Malaysia is not a party. The author elaborated on the first two pillars, which are access to environmental information and public participation in environmental decision-making. Through the author’s analysis of literature, it is clear that implementation of the two pillars can be beneficial to the public and also the Government, and can contribute to promoting good environmental governance in the country.

3. Malaysia is a developing country that is in transition. Its rapid development activities have gravely affected the environment, but despite the amount of laws and policies that have been introduced and implemented, serious problems continue to persist and appear to be

getting worse. Part of the issue may be the top-down approach that the Government has long adopted, but which it seems to be making attempts to change. Through political will and the transformation programmes, there might be hope that the Government of Malaysia could move towards becoming more open, engaging, inclusive, and participatory with citizens and the general public. It might thus be possible for the country to take measures to improve access to environmental information and public participation in environmental decision-making, if it is to achieve its goal of becoming a developed, high-income nation that is sustainable and inclusive by year 2020.

In the next chapter, the author will explore the case of Malaysia in further detail to obtain a better understanding of the country's background and some of the possible key root causes of the environmental challenges it faces, how the concept of sustainable development was introduced into the country's development plans, whether the country currently has any legislative framework for the environment, whether there are any national policies that might lend support for access to information and public participation in environmental decision-making, and the characteristics of Malaysian culture that may influence how environmental matters are perceived and managed in the country.

CHAPTER 4

SUSTAINABLE DEVELOPMENT & CULTURE IN MALAYSIA: A NATION & ENVIRONMENT UNDER TRANSFORMATION

> *"Until a hundred years ago…few people penetrated into the interior of Malaya which was difficult of access and almost uninhabited. Mangrove swamps along the west coast were the first barrier. Then came the tangled thorns, the hungry leeches, the steamy heat and the mud of the lowland jungle belt. Beyond lay the blue mountains of the central range of the peninsula…"* (Gullick 1969, p. 22).

4.1 INTRODUCTION

The history of natural resource exploitation in Malaysia, along with rapid development that occurs as part of the country's struggle to eradicate poverty and reach its goal of Vision 2020, are arguably some of the factors that have led to significant changes in its natural environment. To better understand the backdrop that may have influenced the construction of the Malaysian mindset regarding development and the environment, this chapter will be presented in two parts: **Part 1** will provide an overarching explanation of Malaysia's visions for development, and introduce the main institutional frameworks and policies that

were established to help address the country's environmental issues. In doing so, the author seeks to discover what Malaysia envisions for its future, where the environment is placed in its visions for development, and what legal framework for the environment is currently present in the country. Through obtaining an in-depth understanding of these matters, the author expects to identify some of the efforts that the country has placed on protecting the environment and promoting sustainable development, and to discover if any of these efforts have included providing improvements on access to information and public participation in environmental decision-making. The author will provide an overview of the governance style practiced in the country, as it forms the foundation on which the current system of "access" in Malaysia was built, and discuss the Government transformation agenda, which may have the potential to advance environmental governance for sustainable development in the country.

In **Part 2** of this chapter, the author will discuss how culture and traditions in Malaysia could possibly affect the ways in which the Malaysian public obtain information as well as participate in environmental decision-making. The discussion is related to Part 1 and is pertinent for this research as it could help to explain the possible influence of culture on environmental governance and democracy practices, therefore it may be essential to consider culture when introducing and implementing legislation, policies, frameworks, programmes or campaigns that address environmental issues. Part 2 will explore and identify several cultural traits that are typical of the "East" (specifically Malaysia), and will also provide some examples of how the cultural traits identified in Malaysia may

differ from those of the “West”. However, the scope and limitations of this research will not enable the author to provide a thorough analysis on all aspects of the diverse Malaysian culture, nor to delve into every cultural detail that are commonly associated with the “West”. Hence, to clarify, this part of the chapter is not intended to fulfill such a purpose. Instead, it is meant to provide a general overview and idea of the cultural traits in a developing country like Malaysia or the “East”, and a few examples of that from developed countries or the “West”, to show how and why Malaysia would require a different approach.

4.2 PART 1: VISIONS FOR SUSTAINABLE DEVELOPMENT IN MALAYSIA

4.2.1. *The Drive to Develop*

> *“Hopefully the Malaysian who is born today and in the years to come will be the last generation of our citizens who will be living in a country that is called 'developing'. The ultimate objective that we should aim for is a Malaysia that is a fully developed country by the year 2020”* (Mahathir Mohamad 1991, then Prime Minister of Malaysia).

Since the 1950s, before independence from British colonialism, development planning has been one of the functions of the Government of Malaysia (EPU 2004, p. 3). In 1961, the Economic Planning Unit (EPU) in the

Prime Minister's Department was formed with the initial objective of focusing on "development planning, on major problems in plan execution and on all forms of foreign aid" (EPU 2013). According to the EPU (2004), development planning in Malaysia is structured on a three-tiered cascading planning horizon, which covers the long-, medium- and short-term planning horizons (p. 3). The long-term plans include **Vision 2020**, which covers a thirty-year period beginning 1991, and the outline perspective plans (OPPs)[78]. Following the announcement of the New Economic Policy (NEP)[79] in 1970, the First Outline Perspective Plan (OPP1) was implemented to encompass twenty years from 1971 to 1990. However, the Second Outline Perspective Plan (OPP2), which spanned the period of 1991-2000 and the Third Outline Perspective Plan (OPP3) that was carried out from 2001 to 2010 were prepared on a ten-year time frame. The EPU explains that this was due to the uncertainties and difficulties faced in formulating detailed development programmes for a twenty-year time period while rapid change was taking place in the global environment (EPU 2004, p. 3).

For medium-term planning, five-year development plans were introduced and in the middle of these, a mid-term review (MTR) is performed to evaluate the progress of the plan. The EPU (2004) points out that "[t]he MTR is not only a

[78] According to the EPU (2004), the OPPs were prepared "to set the broad thrusts and strategies in the national development agenda over a long term" while Vision 2020 "spells out the national development aspirations over the long term and provides focus for the national development effort".

[79] Sundaram (2014) explains that "the NEP sought to create the socio-economic conditions for 'national unity' through massive economic redistribution programmes to achieve its twin prongs of 'poverty eradication' (i.e. reduction of the proportion of households earning less than the poverty line income), and 'the restructuring of society' to achieve greater inter-ethnic economic parity, especially between the predominantly Malay Bumiputeras (indigenes) and the mainly ethnic Chinese non-Bumiputeras. The NEP's Outline Perspective Plan for 1971-1990 (OPP) envisaged declining poverty over the next two decades, while 'restructuring society' basically referred to efforts to achieve greater inter-ethnic parity in occupations and corporate wealth ownership, and thus 'eliminate the identification of race with economic function'" (p. 75).

stocktaking exercise to determine whether the plan is implemented in accordance with the stated targets and development schedule, it also reviews macroeconomic and sectoral policies and strategies and makes adjustments, if needed" (p. 4). Finally, the short-term planning is conducted via the annual budget. The Ministry of Finance undertakes this task while the EPU is involved in determining the details of the annual development budget (EPU 2004, p. 4).

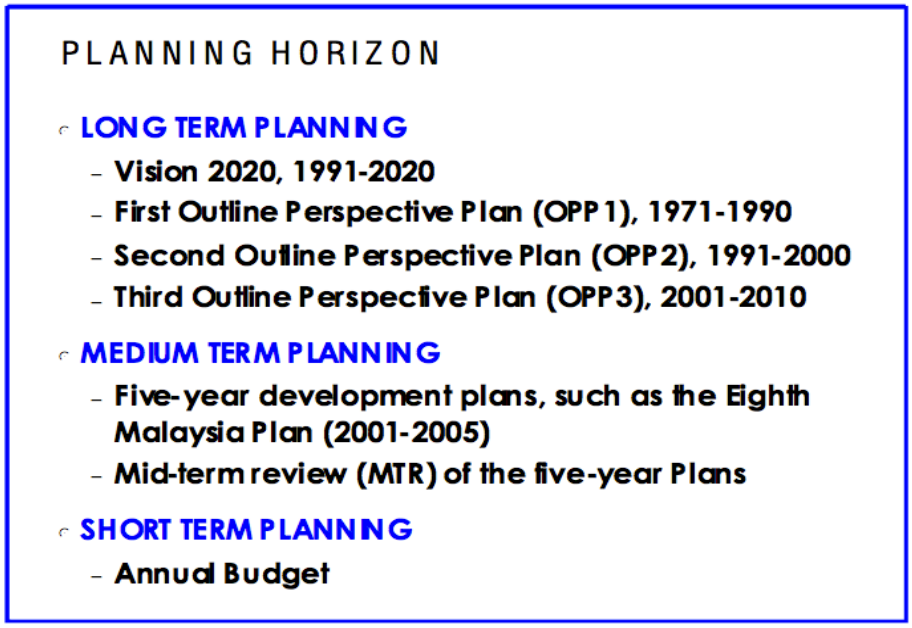


Figure 11: Malaysia's Planning Horizon (EPU 2004)

4.2.1.1. *Malaysia Incorporated: A Pro-Business Strategy*

The introduction of the "Malaysia Incorporated" concept in 1983 saw the Malaysian Government putting efforts in promoting and mainstreaming its pro-business stance. Through this concept, the public and private sectors were called on to contribute to Malaysia's development by regarding the country as though it were a corporation that is jointly owned by both sectors. The two sectors were

thus encouraged to work together in pursuit of a common mission for the nation: “The Malaysia Incorporated concept […] requires that the economic and service arm of the nation work in full cooperation so that the nation as a whole can gain in the way that a well-run corporation prospers…[It] requires that the private and public sectors see themselves as sharing the same fate and destiny as partners, shareholders and workers within the same ‘corporation’, which in this case is the Nation” (Mahathir Mohamad 1984 in *Management* 2005, p. 4-5).

The implementation of such a concept and similar policies that place much emphasis on economic progress may provide an indication of how Malaysia regards the growth of the private sector as a core part of its development approach: “Malaysia’s development efforts are premised on a pro-business growth strategy. The private sector is the engine of growth, while the public sector facilitates development and ensures the achievement of the socio-economic objectives of the nation” (EPU 2004, p. 2). While the nation may benefit from cooperation between the public and private sector, the close bond that is fostered between them could result in perceived bias towards the interests of businesses as opposed to those of the people. In relation to the research topic, although the Government also plays a role in enforcing environmental laws, the initiatives implemented towards supporting the private sector in economic development may at times clash with the duties of the Government to protect the wellbeing of the people and the environment, as it would also need to protect the wellbeing of corporations that are regarded as “engines of growth”. Padman (2002) observes that when concerns arise over a development project,

it would not only be challenging to obtain information from the Government if the information is considered “official secret”, but it would also be challenging to obtain information from the private sector that received contracts from the Government to carry out the projects: “Privatization, corporatization and Malaysia Incorporated policies have strengthened the nexus between government and the private sector. Private firms that obtain government contracts for projects – like the Bakun and Sungai Selangor dams – benefit from the cloak of secrecy as well. The media have no access to private-sector records on public-sector transactions…When implementation runs into problems…government protection renders it impossible for the media to investigate shortcomings or demand accountability” (p. 111). **This is one of the reasons why this research is important for the development of Malaysia because public access to environmental information and participation in environmental decision-making could keep citizens informed of (and involved in) the activities of the Government as well as those of businesses, with less need for unnecessary secrecy that could arguably lead to distrust and negative assumptions. By providing access to information and participation, citizens could also assist the Government in monitoring the activities of businesses in ensuring that they are not in violation of the country’s environmental laws.**

4.2.1.2. ***Vision 2020***

Among the plans that were formulated and implemented to pave and chart Malaysia's progress, Vision 2020 and the 5-year Malaysia Plans could arguably be considered the most popularly known amongst Malaysian citizens in the past several decades. It is highly likely that any Malaysian would have heard, if not understood the term Vision 2020 (or *Wawasan 2020* in Malay language) that was introduced by then Prime Minister, Dr. Mahathir Mohamad, in 1991. Drawing from his background in medicine, Dr. Mahathir explained why he decided upon using the phrase "Vision 2020" and the year associated with it: "Some have wondered why 2020 and not some other year. As a doctor I am attracted to the optometrist measurement of vision; 2020 indicates 100 percent good vision in both eyes. Our Vision 2020 for Malaysia implies this clear vision of where we want to go and what we want to be" (Mahathir Mohamad 1999).

Generally, Malaysia's Vision 2020 refers to the country's long-term goal of becoming a developed nation by year 2020. However, in the face of new global challenges and competition as well as in realising the need to meet with the demands of changing times and society, this goal has evolved into moving Malaysia towards becoming **not only a developed, high-income nation but also one that is sustainable and inclusive**. Through his observation of Malaysia, according to Dr. Mahathir back then, it was pertinent that the country strategically address nine challenges in order to advance and achieve its ultimate development goal: "There can be no fully developed Malaysia until we have finally overcome the nine central strategic challenges that have confronted us

from the moment of our birth as an independent nation" (Mahathir Mohamad 1991).

The nine "challenges", or what may be deemed as objectives, are stated below (extracted from Dr. Mahathir's speech in 1991, with some minor adaptations and added emphasis):

1. **Establishing a united Malaysian nation with a sense of common and shared destiny**. This must be a nation at peace with itself, territorially, and ethnically integrated, living in harmony and full and fair partnership, made up of one 'Bangsa Malaysia' with political loyalty and dedication to the nation.
2. **Creating a psychologically liberated, secure, and developed Malaysian Society** with faith and confidence in itself, justifiably proud of what it is, of what it has accomplished, robust enough to face all manner of adversity. This Malaysian Society must be distinguished by the pursuit of excellence, fully aware of all its potentials, psychologically subservient to none, and respected by the peoples of other nations.
3. **Fostering and developing a mature democratic society**, practising a form of mature consensual, community-oriented Malaysian democracy that can be a model for many developing countries.
4. **Establishing a fully moral and ethical society**, whose citizens are strong in religions and spiritual values and imbued with the highest of ethical standards.

5. **Establishing a mature, liberal and tolerant society** in which Malaysians of all colours and creeds are free to practise and profess their customs, cultures and religious belief and yet feeling that they belong to one nation.
6. **Establishing a scientific and progressive society**, a society that is innovative and forward-looking, one that is not only a consumer of technology but also a contributor to the scientific and technological civilization of the future.
7. **Establishing a fully caring society and a caring culture**, a social system in which society will come before self, in which the welfare of the people will revolve not around the state or the individual but around a strong and resilient family system.
8. **Ensuring an economically just society**. This is a society in which there is a fair and equitable distribution of the wealth of the nation, in which there is full partnership in economic progress. Such a society cannot be in place so long as there is the identification of race with economic function, and the identification of economic backwardness with race.
9. **Establishing a prosperous society**, with an economy that is fully competitive, dynamic, robust and resilient.

(Mahathir Mohamad 1991)

The author notes that the nine challenges listed above appear to be objectives rather than “challenges” that Malaysia needs to achieve in order to advance towards Vision 2020. Interestingly, those described under 2, 3, 4, 6 and 7, mention **psychological liberation, pursuit of excellence, mature democratic society, ethical standards, innovative and forward-looking, scientific and technological civilization, caring society and caring culture**, which could all be some of the associated benefits that might arguably be enhanced through greater access to information and meaningful public participation. Indeed, the author contends that **this research could play an important role in contributing to the development of Malaysia in its quest towards Vision 2020 and beyond, as enhancing access to environmental information and public participation in environmental decision-making in Malaysia could help to foster the notions behind the key words mentioned above.**

In his Vision 2020 speech, Dr. Mahathir had also cautioned that Malaysia should develop in its own mould, highlighting the need to balance economic development with social justice:

> *“*What, you might rightly ask, is ‘a fully developed country’? Do we want to be like any particular country of the present 19 countries that are generally regarded as 'developed countries'? Do we want to be like the United Kingdom, like Canada, like Holland, like Sweden, like Finland, like Japan? To be sure, each of the 19, out of

a world community of more than 160 states, has its strengths. But each also has its fair share of weaknesses. Without being a duplicate of any of them we can still be developed. We should be a developed country in our own mould. Malaysia should not be developed only in the economic sense. It must be a nation that is fully developed along all the dimensions: economically, politically, socially, spiritually, psychologically and culturally. We must be fully developed in terms of national unity and social cohesion, in terms of our economy, in terms of social justice, political stability, system of government, quality of life, social and spiritual values, national pride and confidence" (Mahathir Mohamad 1999).

This is crucial to note because being "developed" in this regard, is not to be confused with following other developed countries' paths towards development. Thus, Malaysia's notion of achieving development is not supposed to be based on the blueprints of other developed nations, or be focused solely on economic development. In fact, Dr. Mahathir (1999) mentions that the environment should be preserved as best as possible in the strive for economic progress by stating, "we must also ensure that our valuable natural resource are not wasted. Our land must remain productive and fertile, our atmosphere clear and clean, our water unpolluted, our forest resources capable of regeneration, able to yield the needs of our national development. The beauty of our land must not be desecrated - for its own sake and for our economic

advancement". **This is why protecting the environment is fundamental towards achieving sustainable development as without it, social and economic advancement would be arguably hampered.**

Over the years, Vision 2020 has been regarded as Malaysia's master plan and this grandiose notion was effectively communicated to the Malaysian people through mass media (with many appearing in the form of theme songs, video clips, and animation[80]), Government speeches, school assemblies, and had also permeated the discussions among citizens in the workplace as well as local coffee shops. From the author's own personal experience of participating in the Malaysian education system, even school exam questions posed for essay-writing (also known as the subjective part of the test) would require students to discuss their knowledge and opinions on Vision 2020.

4.2.1.3. ***The 5-Year Malaysia Plans***

The Malaysia Plan is the five-year plan that was established by the Malaysian Government as part of the country's medium-planning horizon. The formation of the five-year plans began before the country gained independence

[80] One example can be seen in the following link that plays the theme song of Vision 2020, presented in the Malay language: <https://www.youtube.com/watch?v=TRw4ROUM5Qg> (rakza88 2012) [Accessed 28 Oct 2013]. Students memorized the song and sang it in school in addition to the school theme song and other such patriotic songs, many of which were related to national unity, motivation (such as the "Fikirkan Boleh" song) and one in particular was focused on raising environmental awareness. This environmental awareness song is entitled "Hijau" and was made popular by Malaysian singer Zainal Abidin in the 1990s. From the author's personal experience, the tune was frequently played on national television during after-school hours. A part of the song's lyrics mentions "Dewasa ini kita saling merayakan kejayaan yang akhirnya membinasakan", which translates into "Lately we've been celebrating amongst ourselves a success that is ultimately destructive". The word "success" in the context of the song may be used to refer to some forms of development that have led to environmental destruction. The song and lyrics (in Malay) may be accessed here: <http://www.youtube.com/watch?v=68PJW15iJSw> (Hafiz Ashaari 2008) [Accessed 29 Oct 2013].

from British rule in 1957[81]. The EPU (2004) explains that the five-year plans define macroeconomic growth targets and the size and allocation of the public sector development programmes. It also provides the direction for promoted sectors, thus offering guidance to the private sector in determining their own investment policies (p. 4). This may perhaps be one of the reasons why the announcement of a five-year MP is often accompanied by a sense of anticipation. It not only serves to indicate the changing demands of the nation and what the country aspires to achieve in the near future, but it also sets the public agenda and places strategic focus on specific issues of concern.

Through the introduction of such concepts and development plans, as discussed above, it would appear that **national development in Malaysia has become nearly synonymous with economic advancement and is often accompanied by an undertone of patriotism**. In the case of Malaysia, the development of the country signifies the growth of opportunities for education, higher salaries, better infrastructure, quality healthcare, additional lifestyle choices, and a strive towards achieving a respected status in a world ruled by richer, and more powerful countries. **Today, it seems that considerable importance is still placed on creating a business-friendly environment that would attract investment to Malaysia**. This emerged as one of the issues that were observed in the Rare Earth Controversy (Chapter 6), where some concerned individuals questioned the extent to which the country would be willing

[81] Copies of the First Malaysia Plan (1966-1970) up to the Tenth Malaysia Plan (2011-2015) can be accessed at the following link: <http://www.epu.gov.my/en/development-plans/previous-plans> (EPU 2015) [Accessed on 20 March 2016]. The most recent Eleventh Malaysia Plan (2016-2020) is available to download at: <http://rmk11.epu.gov.my/index.php/en/> (EPU 2016) [Accessed on 10 July 2016].

to compromise the health of its people and environment in order to attract foreign investment for economic gain (i.e. profit over people and planet). While developing countries and economies like Malaysia may wish to place importance on attracting foreign investment and implementing various measures to achieve such a goal, it is very important for the processes involved to be promoted and conducted in an open and transparent manner, hence the basis for the case study and this research.

Nevertheless, the Malaysia Plans have still provided a general idea of what sustainable development means in relation to the country's development goals. For example, the Third Malaysia Plan (1976-1980) dedicated a chapter on environment and development. The Plan indeed states that "[t]he effects of development on the nation's environment will not be ignored…The Government recognizes the importance of adopting sound environmental policies" (Malaysia 1976, p. 42). **This is significant as it shows that the Government has officially acknowledged the essential need to protect the environment in the process of development**. The Malaysia Plans have since included sustainable development in its

The most recent Eleventh Malaysia Plan goes further towards promoting "green growth" for sustainability and resilience, and expressly recognises the importance of engaging with the public and enhancing inclusiveness in achieving the nation's development goals (EPU 2016). The theme of the Plan is "Anchoring Growth on People" and in its report, the Prime Minister of Malaysia states that "the *rakyat* will be the centre piece of all development efforts" (EPU 2016, p. 1).

Despite the concerns and challenges that Malaysia continues to experience with issues related to human rights and environmental matters, the author opines that the Eleventh Malaysia Plan appears to display a positive indication that **the Government is acknowledging the value and benefits of a citizen-centric approach towards governance**, and that efforts are still being made to continuously advance the country towards adopting a more sustainable form of development.

4.2.1.4. ***Stages of Environmental Policymaking in Phases of Development***

Throughout Malaysia's process of development, Hezri and Dovers (2012, p. 279-281), explains that the country experienced four stages of environmental policymaking, which the author will briefly summarize (with additional sources integrated) as follows:

Stage 1: Federalization of environmental policy (1971-1976) - Formation of the National Forestry Council (NFC) at Federal level in 1971, enactment of the Protection of Wildlife Act of 1972, and formulation of the EQA 1974 that became a federal legal framework focused on pollution control. It also resulted in the Division of the Environment and the Environmental Quality Council in 1975, as well as the establishment of a Ministry of Science, Technology and the Environment (MOSTE) in 1976.

Stage 2: Crisis and consolidation (1977-88) - Marked the beginning of environmentalism in Malaysia (Hezri & Hasan 2006, p. 5)(Hezri & Hasan 2006). Rapid transformation of the natural environment caused by economic development led to escalating cases of conflict. Civil society organisations stepped up nationally and internationally to voice their concern on environmental issues. When the state of Pahang decided to log the Endau-Rompin forest reserve under its constitutional rights, the situation led to a dispute between the federal Government and the state government. According to Hezri and Hasan (2006), it also "occasioned the first organized public protest in Malaysia, involving conservation groups, scientific societies, political parties and the business community" (p. 5). The National Forestry Policy was adopted in 1977, the National Parks Act in 1980, and the National Forestry Act in 1984. The first national environmental report was published in 1978 and in 1985, the Environmental Impact Assessment (EIA) was recognized as a necessary component required in development applications.

Stage 3: Emergence of sustainable development (1989-2000) - Environmental debates took place in the international arena. In this period (and as stated above in Chapter 3), the term "sustainable development" was introduced through the 1987 Brundtland Report. The international community placed pressure on Malaysia regarding the destruction of forests, and the country reacted by taking a proactive role of defining the term "sustainable development". Malaysia championed the position of the South and gained global recognition of

its leadership role when it was appointed as founding Chair of the United Nations Commission on Sustainable Development in 1993 (Hezri & Dovers 2012, p. 280). The Sixth Malaysia Plan devoted a chapter to the environment, which was seen as a progress in environmental policymaking as it displayed the Government's support in enhancing environmental conservation and sustainable development (Sham Sani 1993, p. 83-85).

Stage 4: Policy integration for sustainable development (2001-2012) - Refers to the era in which efforts have been sought to fill the gap between environmental policymaking and implementation. Economic growth in Malaysia had earned respect in the developing world (Hezri & Hasan 2006, p. 6). The Government adopted a consultative approach towards civil society and private sector, including in the formulation of the Biodiversity Policy 1998, National Policy on the Environment 2002 and the National Climate Change Policy 2010. A Ministry of Natural Resources and Environment was established in 2004 (Hezri & Dovers 2012, p. 281). The low-carbon economy became a notion supported in the Ministry, which eventually led to the establishment of the Ministry of Energy, Green Technology and Water in 2009.

Due to the scope and limitations of this research, the author has provided only a brief snapshot of the evolution of environmental policy-making in the context of sustainable development in Malaysia, and does not intend to delve

further into this particular area. More information on this topic of discussion could be referred to in Hezri and Dovers (2012), and Hezri and Hasan (2006).

4.2.2. *Main Environmental Legislation*

4.2.2.1. ***Constitution of Malaysia***

Malaysia practices a federal system of government, and the Constitution of Malaysia clearly defines the federal and state powers and functions (Sham Sani 1993, p. 90). It does not, however, expressly state the word "environment" (Harding & Azmi Sharom 2007, p. 128; Haliza Abdul Rahman 2010)[82]. Nevertheless, the Constitution indicates specific jurisdiction over matters that concern the environment. As Azmi Sharom (2002) notes, "[a]lthough there are no specific provisions with regard to environment as a whole, there are provisions in the constitution that are highly influential in environmental matters" (p. 859). Therefore, even though the term "environment" does not appear in the Constitution, references to it are made through various subjects such as rivers and forest, among others. This is apparent in Article 74 of the Constitution, which states the distribution of powers between the Federal and State Legislatures, according to the Ninth Schedule of the Constitution, which lists the separation of

[82] That said, some authors such as Haliza Abdul Rahman (2010) would argue that the provisions in the Federal Constitution that state the citizens' right to life[82] can be interpreted as the right to a healthy environment: "The Federal Constitution contains provisions that echo the most fundamental of rights as set out in the Universal Declaration – the right to life and liberty, equality before the law and equal protection of the law, freedom of movement, freedom of speech, assembly and association, freedom of religion, the right to education and possession of property. In this provision, the right to life can be described as the right of every citizen in Malaysia to live in the healthy and clean environment".

legislative powers according to three lists – the Federal List, the State List and the Concurrent List[83].

The Federal list states the matters over which the federal parliament has authority to legislate, such as commerce, trade and industry. The State list defines the states' legislative powers over matters such as development control, local government, land, water, forests, and mining, while matters on the Concurrent List are those over which competency is shared between the federal and state legislatures. According to Hamzah (2000), "[a]s the term 'environment' does not appear in any of the Lists, environmental matters can fall under the jurisdiction of federal authorities, state authorities, or the concurrent jurisdiction of both federal and state authorities. This is so because the federal government, by virtue of the specific powers granted to it, is regarded as responsible for general environmental protection and pollution prevention, while matters which concern natural resources such as land, water and forests are in the State List and thus come under the exclusive purview of the states. However, in any federal-state system, complexity does arise over the interpretation of Constitutional provisions and pose a challenge to cooperative federalism" (p. 33). Undeniably, further inspection of the three Lists reveals that the management of basic resources and most environmentally important subjects are within the jurisdiction of the states, for instance matters concerning land, water, rivers, freshwater fishing, forest and agriculture (Staerdahl et al. 2004, p. 6; Sham Sani 1993, p. 90). This could work

[83] It is made more complicated with Sabah and Sarawak that has its own lists that are separate from those applied to Peninsula Malaysia. These can be referred to in the Federal Constitution of Malaysia (1957) in List IIA and List IIIA under the Ninth Schedule.

well in that more Government bodies would be involved in environmental regulation but it could also work badly, as no one body would take responsibility.

4.2.2.2. ***Environmental Quality Act 1974***

On matters pertaining to environmental protection, the framework law enacted by the Federal Government that is mainly referred to in addressing environmental issues in Malaysia is the Environmental Quality Act 1974 (EQA 1974). It is officially described in as: "An Act relating to the prevention, abatement, control of pollution and enhancement of the environment, and for purposes connected therewith" (Laws of Malaysia 1974, Long Title & Preamble).

Prior to the introduction of the EQA 1974, early management response to the environment was influenced by large-scale economic development that commenced in the British colonial period. During that time, mass exploitation of natural resources through tin mining and rubber plantations that were recovered by a variety of techniques[84] caused severe pollution that needed to be managed. Thus, the environmental regulations of the colonial and post-independence period were distributed in separate enactments, such as the Mining Enactment and Forest Enactment. The first law that was related to the environment appears to be the Waters Enactment 1920[85]. However, the environmental-related responses that were introduced were not specifically designed to address what

[84] Sham Sani (1993) recalls two popular techniques that were used in extracting tin during the British colonial rule – ground sluicing and open pit mining. He states that both techniques "contributed to environmental degradation in the form of disturbed and scarred landscapes, tailings dumps, and deteriorating quality of the rivers draining the mining areas" (p. 8).

[85] Although review of literature have also found that the earliest formal response to environmental-related issues could have been through the Straits Settlement Ordinance No. 3 of 1894, which was aimed at the protection of several species of wild birds (Sham Sani 1999, p. 33; Ainul Jaria Maidin 2006).

would be considered today as an “environmental” problem. According to Mustafa (2011), the responses were instead made to promote sound house-keeping practices in specific sectors that was in line with government policies of the time (p. 22). Hence, before the EQA 1974 was gazetted, all legislation concerning the environment tended to be sectoral in nature, and focused on specific areas of mostly industrial activities. As a result, Ainul Jaria Maidin (2006) explains that “[t]hese [laws] failed to adopt any integrated approach and [were] unable to cope with the ever increasing and complex environmental problems of the modernising nation” (p. 3).

Although the number of legislation concerning environmental protection had significantly increased by the end of the ‘70s, it was still a great challenge to address environmental-related concerns, as Ainul Jaria Maidin (2006) points out “much of the legislation was not originally designed to address core environmental problems but was passed to address specific instances as they arose from specific activity or forms of development” (p. 3). The establishment of the EQA 1974, therefore, was seen as a tangible milestone for environmental policy framework in Malaysia and also considered to be among the first examples of specific environmental legislation in the developing world (Hamzah 2000, p. 32). The spirit of the Act was officially endorsed in the Third Malaysia Plan (1976 – 1980) and further attention on matters concerning environmental sustainability were progressively reaffirmed among the thrusts of the Malaysia Plans that followed[86], up to the most recent Tenth Malaysia Plan (2011-2015).

[86] Which were the Fourth MP (1981-1985), Fifth MP (1986-1990), Sixth MP (1991-1995), Seventh MP (1996-2000), Eighth MP (2001-2005), and Ninth MP (2006-2010).

4.2.3. *National Policies Relating to the Environment*

While the EQA 1974 serves as the main framework for environmental law in Malaysia, environmental governance in the country is also supported by several national policies that place emphasis on protecting the environment. Although policies are not legally binding, they may still provide a guiding set of principles and practices needed to achieve the objectives that the Government is striving to commit to through the implementation of strategic action plans, programmes and initiatives. Policies may also hold the potential to influence lawmaking: “A policy outlines what a government ministry hopes to achieve and the methods and principles it will use to achieve them. It states the goals of the ministry. A policy document is not a law but it will often identify new laws needed to achieve its goals” (Pretorius 2014, p. 181). For example, the Renewable Energy Policy was introduced in 2009 in Malaysia, and was later followed by the enforcement of the Renewable Energy Act and the Sustainable Energy Development Authority (SEDA) Act in 2011. The author believes that in the case of Malaysia, Federal policies could also play an important role in catalyzing political will and cooperation among national and local leaders, while providing some flexibility in experimenting on new solutions to the country’s problems or on areas where the Government wishes to explore further as part of its development goals.

The author identifies two policies that appear to establish the main guiding principles for environmental sustainability in Malaysia – the National Policy on the Environment (2002) and the National Policy on Climate Change (2010). Due to the country’s commitment and obligation under the 1992 Convention on

Biological Diversity (CBD), the National Policy on Biological Diversity (1998) has also been given much importance by the Government. Table 4 provides a quick summary of selected Malaysian policies that directly address environmental issues or are closely related to matters concerning the environment. The last two columns on the far right seek to identify whether any of the policies listed contain statements, principles, provisions, or strategic thrusts that expressly support public access to environmental information and/or public participation in environmental decision-making. Table 4 can be viewed in the next page.

Table 4: MALAYSIA'S NATIONAL POLICIES RELATING TO THE ENVIRONMENT

POLICY NAME	POLICY STATEMENT/ GOAL	OBJECTIVES	ELEMENTS IN SUPPORT OF ACCESS TO INFORMATION	ELEMENTS IN SUPPORT OF PUBLIC PARTICIPATION IN DECISION-MAKING
NATIONAL FORESTRY POLICY (1978, REVISED 1993)	To dedicate as Permanent Forest Estate sufficient areas strategically located throughout the country, in accordance with the concept of rational land use. The Permanent Forest Estate will be managed and classified under four major functions: . **PROTECTION FOREST** for ensuring favourable climatic and physical conditions of the country, the safeguarding of water resources, soil fertility, environmental quality, preservation of biological diversity and the minimisation of damage by floods and erosion to rivers and agricultural lands.	• To conserve and manage the nation's forest based on the principles of sustainable management. • To protect the environment as well as to conserve biological diversity, genetic resources, and to enhance research and education.	• Under **Policy Objectives**: "…*to enhance research and education".* • Under **Policy Statements**: *"To promote education in forestry and undertake publicity and extension services in order to generate better understanding among the community on the multiple values of forests".*	-

	. **PRODUCTION FOREST** for the supply in perpetuity, at reasonable rates of all forms of forest produce which can be economically produced within the country and are required for agricultural, domestic, industrial purposes and for export. . **AMENITY FOREST** for the conservation of adequate forest areas for recreation, ecotourism and public awareness in forestry. . **RESEARCH AND EDUCATION FOREST** for the conduct of research, education and conservation of biological diversity.[87]		• Under **Forestry Education And Extension:** *"Promoting public awareness in forestry through:* o *various mass media programmes;* o *educating the community to appreciate the functions of forest, and introducing forestry science in the school curriculum".*	

[87] The rest of the Policy statements can be found through the following link: http://www.mtc.com.my/issues/index.php?option=com_content&view=article&id=1%3Anational-forestry-policy-1978-revised-1993&catid=25%3Athe-project&Itemid=27 [Accessed 21 February 2013].

NATIONAL ENERGY POLICY (1979)		**i. Supply Objective:** - To ensure adequate, secure and cost-effective energy supply through developing and utilizing alternative sources of energy (both non-renewable and renewable) from within and outside the country. - To ensure the realization of the supply objective, the focus of policy initiatives, particularly with respect to crude oil and gas, were aimed at both extending the life of domestic depletable energy resources, as well as diversifiying away from oil dependence to include other forms of fuel resources. **ii. Utilization Objective** - To promote efficient utilization of energy and discourage wasteful and non-productive patterns of energy consumption.	-	-

		iii. Environmental Objective - To minimize the negative environmental impacts on the energy supply chain i.e. energy production, conservation, transportation and utilization.		
NATIONAL RENEWABLE ENERGY POLICY & ACTION PLAN (2009)	Enhancing the utilisation of indigenous renewable energy (RE) resources to contribute towards national electricity supply security and sustainable socioeconomic development.	1. To increase RE contribution in the national power generation mix; 2. To facilitate the growth of the RE industry; 3. To ensure reasonable RE generation costs; 4. To conserve the environment for future generation; and 5. To enhance awareness on the role and importance of RE.	Under **Policy Objectives:** *"To enhance awareness on the role and importance of RE".* Under **Policy Mission:** *"Thrust 5: Design And Implement An RE Advocacy Programme*[88]*"*	

[88] The policy's Thrust 5 explains, "[a]dvocacy programmes that are tailored with specific messages for specific audiences should be implemented. For example an advocacy programme targeted at investors and RE market entrants will need to convey a message that is subtly different from that of a general public advocacy programme designed to secure buy-in to the idea of societal payments for a clean environment. The common aim of all advocacy programmes is to increase the awareness of all stakeholders of the benefits and advantages of utilising RE and participation in RE businesses" (KeTTHA 2009, p. iv). It also expressly states the importance of obtaining citizen approval and support: "Since the RE Policy is a forward-looking policy with new approaches it is important for its success that buy-in by relevant stakeholders and society at large is secured and this could be achieved through Thrust 5" (p. iv). Pages 64-68 of the Policy document provides details on the RE Advocacy Programme, including its rationale, phases and costs.

NATIONAL POLICY ON BIOLOGICAL DIVERSITY (1998)	To conserve Malaysia's biological diversity and to ensure that its components are utilized in a sustainable manner for the continued progress and socio-economic development of the nation	1. To optimise economic benefits from sustainable utilisation of the components of biological diversity; 2. To ensure long-term food security for the nation; 3. To maintain and improve environmental stability for proper functioning of ecological systems; 4. To ensure preservation of the unique biological heritage of the nation for the benefit of present and future generations; 5. To enhance scientific and technological knowledge, and educational, social, cultural and aesthetic values of biological diversity; 6. To emphasize biosafety considerations in the development and application of biotechnology	Under **Principles:** *"(x) Public awareness and education is essential for ensuring the conservation of biological diversity and the sustainable utilisation of its components".* Under **Strategies for Effective Management of Biological Diversity:** *"12. <u>Enhance Institutional And Public Awareness</u> Promote and encourage the understanding and participation of the public and institutions for the effective conservation and protection of biological diversity."* *"14. <u>Exchange of Information</u> Promote and encourage the exchange of information on biological diversity at local and international levels."*	Under **Principles**: *"(vii) The role of local communities in the conservation, management and utilisation of biological diversity must be recognized and their rightful share of benefits should be ensured".*

NATIONAL POLICY ON THE ENVIRONMENT (2002)	For continuous economic, social and cultural progress and enhancement of the quality of life of Malaysians, through environmentally sound and sustainable development	To achieve: • a clean, safe, healthy and productive environment for present and future generations, • the conservation of the country's unique and diverse cultural and natural heritage with effective participation by all sectors of society • a sustainable lifestyle and pattern of consumption and production.	Under **Green Strategy 1, Education and Awareness:** *"To achieve a deeper and better understanding of the concepts of environmentally sound and sustainable development, and a caring attitude towards nature, environmental education and awareness will be promoted across the board, incorporating information dissemination and training, in line with the recommendations of Agenda 21".* *"1.1. Comprehensive formal and informal environmental education and training strategies and information dissemination programmes will be devised and introduced".*	Under **Fifth Principle: Integrated Decision-making** *"Integrate environmental dimensions in the planning and implementation of the policies, objectives and mandates of all sectors to protect the environment".*

			"1.6. Public information services on environment and development will be made available and these may include information technology, multi-media and other audio-visual methods. Public and academic forums to discuss environmental and development issues will be encouraged". *"1.8. The role of the media in disseminating environmental information will be strengthened. In particular, environmental journalism and associations of environmental journalists will be accorded recognition, with a view to raising the quality of environmental reporting".*	
NATIONAL PHYSICAL PLAN (2006)	The establishment of an efficient, equitable and sustainable national spatial framework to guide the overall development of the country towards achieving a developed and high income nation status by 2020	i. To rationalise and consolidate the national spatial planning framework supported by key strategic infrastructure for economic efficiency and global competitiveness.		Under **Objective 4: To enhance spatial and environmental quality, diversity and safety for a high quality of life and liveability:**

		ii. To optimise utilisation of land and natural resources for sustainable development and biodiversity conservation. iii. To promote more balanced regional development for national economic integration and social unity. iv. To enhance spatial and environmental quality, diversity and safety for a high quality of life and liveability. v. To facilitate efficient integrated inter-state connectivity and public common users' space provision for social interaction and sustainable communities in line with the 1Malaysia concept.		"*Greater community participation and social inclusiveness will be encouraged to ensure more inclusive planning at the local levels" (p. 28).* *"As the community knows their needs and aspirations best, citizens and private sector engagement is crucial" (p. 28).*
NATIONAL GREEN TECHNOLOGY POLICY (2009)	Green Technology (GT) shall be a driver to accelerate the national economy and promote sustainable development.	• To minimize growth of energy consumption while enhancing economic development;	Under **Policy objectives:** *"To enhance public education & awareness on Green Technology and encourage its widespread use".*	

		• To facilitate the growth of Green Technology industry & enhance its contribution to national economy; • To increase national capability and capacity for innovation in Green Technology development & enhance Malaysia's competitiveness in global arena; • To ensure sustainable development & conserve environment for future generations; • To enhance public education & awareness on Green Technology and encourage its widespread use.	Under Policy's first goal, "**Short-Term Goals: 10th Malaysian Plan":** *"Increase public awareness and commitment for the adoption and application of Green Technology through advocacy programmes"* *"Widespread availability and recognition of Green Technology in terms of products, appliances, equipment and systems in the local market through standards, rating and labelling programmes".* Under **5th Strategic Thrust: Promotion and Public Awareness** *"To provide education, awareness and promotion in the area of GT to everyone through various activities and modes* *(media and events that reaches the grass roots levels)"*	

NATIONAL POLICY ON CLIMATE CHANGE (2010)	Ensure climate-resilient development to fulfill national aspirations for sustainability	• Mainstreaming climate change through wise management of resources and enhanced environmental conservation resulting in strengthened economic competitiveness and improved quality of life; • Integration of responses into national policies, plans and programmes to strengthen the resilience of development from arising and potential impacts of climate change; and • Strengthening of institutional and implementation capacity to better harness opportunities to reduce negative impacts of climate change.	Under **Strategic Thrusts - ST9-P4**: *"Increase awareness and community participation to promote behavioural responses to climate change" (p. 7).*	Under **Principles – P4: Effective Participation:** *"Improve participation of stakeholders and major groups for effective implementation of climate change responses" (p. 5).* Under **Strategic Thrusts - ST8-P4:** *"Improve collaboration through efficient communication and coordination among all stakeholders for effective implementation of climate change responses" (p. 7).*

In comparison to other developing countries, Hezri and Dovers (2012) assert that Malaysia could be considered a "pioneer in environmental policy institutionalization" (p. 279), noting that the country's institutional response to the environment began earlier when compared to six other developing countries such as Brazil and India (refer to Figure 12).

Country	*Environment ministry*	*National environ-mental agency*	*National environ-mental report*	*Legal framework for the environment*	*Article in the constitution*	*Council of environ-mental experts*
Brazil	1985/1992	1989	–	1981	1988	1984/1997
India	1980/1985	1974	1982	1986	1976/1994	1993
Malaysia	1976/2004	1975	1978	1974	–	1975/1985
Mexico	1982/1994	1992	1986	1972/1988	1988	1995
Nigeria	–	1988	1992	1988	1979/1989	1990
Vietnam	1992	1993	1995	1994	–	–

Source: Adapted from Weidner 2002.

a A slash indicates a major change from the initial to the contemporary institutional set-up.

Figure 12: The institutionalisation of environmental policy in six developing countries, including Malaysia, extracted from Hezri and Dovers (2012).

Yet, in spite of the education and awareness-raising aspects contained in some of the policies displayed in the table, the challenges that Malaysia faces in managing its environmental problems continue to grow and little progress has been made in inculcating a sense of environmental responsibility that can translate into actions amongst its citizens (Interview with NGO representative, 11 April 2014). It is apparent that Malaysia continues to experience obstacles in the implementation of its environmental laws and policies. As highlighted by Ainul Jaria Maidin (2005), "Many observers both from within and outside Malaysia have often remarked that while Malaysia has one of the best sets of

environmental legislation; […] the effective implementation of this legislation has never been impressive". Harding (1996) also points to the lack of human rights applied in practice and offers a grim forecast of the development of environmental rights in Malaysia, which he believes is unlikely to occur: "Unless democratic and legal institutions function effectively and human rights in general are observed, it is hard to see how the environment can avoid further degradation" (p. 230).

4.2.4. *The Government Transformation Agenda*

Prime Minister Dato' Sri Najib Razak expressly stated, "When I mentioned in 2011, that the days of 'government knows best' are over, I meant it. I expected the government to embrace the culture of being a people-friendly, proactive organisation that has the people's interests at heart" (PEMANDU 2012)[89]. As a former British colony, Malaysia has a Westminster style of parliamentary democracy, which it adopted from the British. Its political system has been described as being ethnically-based (i.e. ethnicity determines party identification (Common 2003, p. 165)[90]. However, according to Richard Common (2003), despite its status as a parliamentary democracy, Malaysia's political leadership does not change very often (p. 166). Tun Dr. Mahathir, for example, previously held the post of Prime Minister for twenty years, and is known as Asia's longest-serving leader (Ibid, p. 166). Thus, Common (Ibid, p. 165) and several others (Zakaria 1989; Case 2001; Crouch 1993; Khoo 2002, p. 74; Lee 2014) have

[89] More details on the Government's transformation agenda will be explained in Chapter 4 of this thesis.
[90] This characteristic of Malaysian politics will be further discussed in Chapter 4.

described Malaysia as a “semi”, “quasi” or “modified” democracy. Nevertheless, the launching of the Government transformation agenda appear to indicate that the Government may be willing to make some changes in its style of governance.

In 2010, the National Transformation Programme was launched to “propel Malaysia’s economy toward high income status”, which the country envisions to achieve by year 2020 (Najib Tun Razak 2013). According to PEMANDU, one of the Government’s reasons for introducing a national transformation agenda was because it “recognised that its institutions underperform largely due to the status quo, i.e. the limitations of the way the Government was structured and organised. Thus in order to bring about ‘Herculean change’, this limitation had to be removed, or in other words, transformed into a totally different organisation” (PEMANDU 2011a). To accomplish its “big and fast results”, the Government implemented its transformation agenda, which consists of several “transformation” initiatives that it had strategically planned to undertake (PEMANDU 2011b). At the time of writing (March 2016), only the Government Transformation Programme (GTP) and the Economic Transformation Programme (ETP) have been implemented thus far, while the rest[91] have yet to be initiated.

Prime Minister Najib Razak (2013) declared that “[t]he National Transformation Programme encompasses a plan for reforming the economy,

[91] In the 2015 Budget Speech, PM Najib Razak stated, “The [National Transformation Policy (NTP)] comprises the Government Transformation Programme (GTP), Economic Transformation Programme (ETP), Political Transformation Programme (PTP), Community Transformation Programme (CTP), Social Transformation Programme (STP) and Fiscal Transformation Programme (FTP) in our efforts to achieve an advanced high-income economy” (cited in Bernama.com 2014). His speech can accessed through the following link: <http://www.bernama.com/bernama/v8/newsspeech.php?id=753> (Najib Tun Razak 2014) [Accessed 20 Nov 2014].

namely the Economic Transformation Programme, and a plan to transform government itself – the Government Transformation Programme". Under the GTP, the National Key Result Areas (NKRAs), which are priority areas deemed to have the greatest impact on Malaysians, were identified. The priority areas were determined from the results of various surveys, opinion polls and dialogues that the Government had conducted with the public: "Each NKRA is led by a Cabinet Minister who is ultimately responsible to the Prime Minister for the successes and shortfalls of the NKRA's key performance indicator" (PEMANDU 2011c). The NKRAs and the Minister responsible for each of them are detailed in Figure 13, as below.

NKRAs	HEADED BY
Reducing Crime	Minister of Home Affairs
Fighting Corruption	Minister in the Prime Minister's Department, in charge of Law
Improving Student Outcomes	Minister of Education
Raising Living Standards of Low-Income Households	Minister of Women, Family and Community Development
Improving Rural Development	Minister of Rural and Regional Development
Improving Urban Public Transport	Minister of Transport
Addressing Cost of Living	Deputy Prime Minister

Figure 13: The NKRAs and Ministers heading them (PEMANDU 2011c)

As seen in the figure above, the NKRAs do not include environmental protection or sustainability. In this regard, the author cannot confirm whether advancements have been made in sustainable development through the launch of the transformation agenda. Nonetheless, the transformation agenda is relevant to this research as the Government has used it to promote citizen-centricity and

public engagement among its leaders, officers and other employees. For example, in referring to Government efforts to transform the civil service and its delivery of public services, Dato' Sri Dr. Sharifah Zarah Syed Ahmad, Secretary General of the Ministry of Communications and Multimedia (2014) claims that the road to transformation is "rocky and perilous" but while it can be an especially daunting task to perform, considering the sheer size of the public service, she stresses that it is a challenge one must rise to and that it needs to be done through engaging with the public:

> "I believe that there are many elements involved in ensuring that transformation is successful. Critical among them is the need to ensure that everybody's interest is captured. With our citizens today being more affluent, informed and vocal, the public service needs to communicate and engage the public in all decision-making processes. We need to involve them in the process of governance and apply the practise of co-creating and co-designing within the public service. The public service culture also needs to change. We need to listen more to what the public, stakeholders and our internal customers are saying and demanding. We need public servants who will probe and provoke others, to get their views and inputs in ensuring that all transformation efforts are being supported and internalised" (2014, p. 5-6).

The transformation agenda, therefore, could serve to provide the stepping-stones for the Government to move towards fostering democratic principles and practices, become more engaged and inclusive with the public, and possibly be more open to the idea of enhancing public access to environmental information and participation in environmental decision-making – for the betterment of Malaysian citizens, the Government, and the country.

4.3 PART 2: CULTURAL INFLUENCES

> *"A culturally aware approach to public action pays attention to factors that may be common sense to the intended beneficiaries but are often exotic, irrelevant, or irrational from the perspective of the policy maker".*
> *(Rao & Walton 2004, p. 8)*

In researching on access to information and public participation in Malaysia, the author observed that culture could play a crucial role in how environmental governance is implemented and how Malaysians may respond to environmental issues. Although the environmental challenges faced in a developing Southeast Asian or "Eastern"[92] country like Malaysia could share similarities to those experienced in more developed, "Western" countries such as the United States,

[92] The terms "East" or "Eastern", will be used in this chapter to refer specifically to the traits that are generally associated with traditional Asian cultures while the terms "West" or "Western" will refer to the traits generally identified as American and European cultures.

Britain or Australia, the ways in which the peoples of each country express concern, share information, communicate with one another and with their Governments on environmental issues, as well as respond to perceived environmental threats could differ significantly. While the author acknowledges that their differences in this regard could be due to various factors, culture could also arguably be one of the key factors that influence how people choose to express concern, share information, interact and communicate on environmental matters. In other words, the culture in Malaysia that differs from "Western" cultures may also require a somewhat different approach in improving and implementing access to environmental information and public participation in environmental decision-making.

4.3.1. *Culture: Definition and Dimensions*

As there is no universal definition of the term "culture", the definition derived by Spencer-Oatey (2000) will be adopted in this chapter to avoid any confusion to the meaning of the term as used in this research. This definition was chosen because it is one that comes closest to what the author intends to refer to in the discussion. Spencer-Oatey's definition is as follows:

> "Culture is a fuzzy set of basic assumptions and values, orientations to life, beliefs, policies, procedures and behavioural conventions that are shared by a group of people, and that influence (but do not determine) each

> member's behaviour and his/her interpretations of the 'meaning' of other people's behaviour" (Spencer-Oatey 2000, p. 4).

To Spencer-Oatey, culture is a "fuzzy" concept in that "group members are unlikely to share identical sets of attitudes, beliefs and so on, but rather show 'family resemblances', with the result that there is no absolute set of features that can distinguish definitively one cultural group from another" (Ibid). The author agrees with this explanation as culture is indeed a term that carries complex meanings, and Spencer-Oatey's definition of culture could be particularly helpful in acknowledging the overlap that may occur among various cultural practices, such as those found in Malaysia, especially considering that cultures practiced today could have arguably been influenced by recent events such as globalization, increase in migration, and rising popularity of social media. In other words, Spencer-Oatey's definition of culture could be helpful in explaining the case of Malaysia, because it is suitable for such a place where cultural identity is somewhat "fuzzy", due to its rich mix of ethnic groups and their own cultural practices, and also due to the effects of globalization along with the rapid socio-economic transitions that the country has been experiencing (Wee in Das & Lee 2014, p. 332; Das & Lee 2014, p. 1; Aida Idris 2012, p. 118). Hence, the author believes that there is no absolute set of features to differentiate one cultural group from another, but rather "family resemblances", as explained by Spencer-Oatey, such as those that can be identified in "Eastern" cultures and "Western" cultures.

Geert Hofstede developed a set of cultural dimensions that could be used to describe and compare national cultures to one another. He asserts that national cultures differ in values (feelings of good or evil), and tend to be learned as children, explaining that the most important aspect of national cultures are learned before the age of ten (Hofstede in Geert Hofstede Consortium 2013). In this regard, the author does not entirely agree with Hofstede's classification of cultural dimensions, as she believes that overlaps can occur in culture. For example, a society that strongly holds onto tradition and customs may still be able to practice them without necessarily being opposed to modernity or perceiving future changes with suspicion, as insinuated by Hofstede's cultural dimension on Long Term Orientation (Hofstede et al. 2010). This can be seen in the case of Malaysia, where the author has observed that some "traditional" practices such as taking off shoes when entering the home can be seen in modern, city life, while "modern" elements such as use of technology has appeared in traditional, rural communities. Additionally, the author opines that his conclusion on national cultures being learned before the age of ten does not take into account the experiences of the ever-growing numbers of "third culture kids" (TCKs), who have been raised in multiple countries and are able to learn and adapt to several national cultures at various stages of their lives (Pollock & van Reken 2009, p. 13). From this observation, the author acknowledges that there could be grey areas in the cultural dimensions that Hofstede introduced[93], such

[93] This research, however, does not intend to provide a thorough analysis of Hofstede's cultural dimensions, but merely to use it for general reference and comparison of cultural aspects between Eastern and Western countries, such as Malaysia and the United States. To know more about each one of Hofstede's cultural dimensions and what they are supposed to signify, please refer to the following link: <http://geert-hofstede.com/national-culture.html> (Hofstede et al. 2010) [Accessed 18 Aug 2015].

as what the author had mentioned above concerning the dimension on Long Term Orientation. Hence, in acknowledging that such complexities exist, it can be particularly difficult to tell what the dominant values of a rapidly developing country like Malaysia would be as it undergoes changes in its culture that arise from both internal and external factors. Kali Charan Pandey (2008) mentions of Wittgenstein, who claimed that even two periods of a culture can be compared: “He prescribes a comparison between different periods of culture and maintains that as there is a family-resemblance among various members of a family similarly there exists a family resemblance between different periods of a culture from the point of view of the manifestations of its cultural values” (p. 127). Nevertheless, Hofstede’s cultural dimensions may be referred to in this chapter as the author opines that it could offer a general idea of how a country’s culture may be practiced in its society, thus providing some characteristics of the “family resemblances” that can be found in Malaysian culture. The author may also refer to some of Hofstede’s cultural dimensions to provide additional viewpoints on certain aspects of Malaysian culture that may play a role in how Malaysians access information and participate in environmental decision-making.

4.3.2. *Malaysia Truly Asia: A Unique Cultural Hybrid*

To gain an idea of the cultural characteristics or “family resemblances” of a uniquely diverse Southeast Asian country like Malaysia, it is essential to acknowledge the multi-ethnic and multi-religious composition of Malaysian society, as this has had a clear influence on the general culture. Unlike that seen

in the neighboring country of Thailand, the ethnic (and religious) groups that form the Malaysian society, with representations in Government and politics are not only made up of Malays or native *bumiputeras*[94] (Boyle 1998, p. 97). The settled and integrated descendants of previous Chinese and Indian immigrants who mostly reside in Peninsular Malaysia (or West Malaysia) and those from the diverse tribes of Sabah and Sarawak in the island of Borneo (or East Malaysia) also contribute to the population's national demography (Department of Statistics Malaysia 2011). The country's ethnic composition was considered so unique to Malaysia that in 1999, the Ministry of Tourism[95] began a marketing campaign to highlight the ethnic, religious and cultural diversity of the nation. "Malaysia, Truly Asia" became a catchy slogan that served to promote the rich cultural influence of the major Asian ethnic groups that have become part and parcel of Malaysia's identity as seen today (Malaysia Tourism Promotion Board 2000). In describing the message behind its slogan, Tourism Malaysia claims that "[t]here is only one place where all the colours, flavours, sounds and sights of Asia come together – Malaysia. No other country has Asia's three major races, Malay, Chinese, Indian, plus various other ethnic groups in large numbers. Nowhere is there such exciting diversity of cultures, festivals, traditions and customs, offering myriad experiences. No other country is 'Truly Asia' as Malaysia" (Tourism Malaysia 2008). Visitors to Malaysia have also noted this distinct "miniature Asia" character of the society. In the blog of a travel guide website, the writer states, "Perhaps the *largest* reason why Malaysia is 'Truly Asia' is its culture. With roots

[94] "Bumiputera" means "son of the soil" and in Malaysia it is generally used to refer to Malays and indigenous peoples.
[95] The Ministry of Tourism is more popularly known as Tourism Malaysia.

and influences from the Chinese, Indians and even British Colonialists, Malaysia is one of the world's greatest melting pots" (TourHQ 2014).

Indeed, the diversity present in Malaysian society has been influential in shaping Malaysian culture, sense of identity, and even public participation in decision-making processes. As observed by Leigh and Lip (2004), "Within Malaysia, people identify themselves according to their ethnic group, regardless of generation. They will debate whatever government policy that appears to threaten their own cultural identity, language and religion, elements that they see as signatory to their being Chinese, Malay, Indian, Iban or each of the other groups" (p. 303).

John Boyle (1998), who carried out research in Thailand, Indonesia and Malaysia, identifies some broad cultural characteristics of these countries and explores how these characteristics could help to explain the difficulties that the countries have faced in implementing EIA (p. 96). Boyle explains that the EIA was invented in the West[96] and observes that environmental policies and programmes there were a result of "bottom up" initiatives[97] (Boyle 1998, p. 103). In developing countries, on the other hand, he argues that,

> "[L]eaders committed genuinely to addressing environmental problems face a much more difficult challenge than their developed country counterparts. Not only must they contend

[96] The origin of the Environmental Impact Assessment (EIA) system stemmed from the enactment of the National Environmental Policy Act (NEPA) in 1970 by the United States (Ogola 2007, p. 1; Miller 2013).
[97] Indeed, as observed by Ogola (2007) "rapid industrialization and urbanization in western countries was causing rapid loss of natural resources…In early 60s, investors and people realized that the projects they were under taking were affecting the environment, resources, raw materials and people. As a result of this, pressure groups formed with the aim of getting a tool that can be used to safeguard the environment in any development" (p. 1).

> with powerful development interests, as in developed countries, but they do so with much more limited political resources. They cannot rely on an educated, informed, and mobilized public both to demand and support government action to the extent that is possible in developed countries…They also tend to be much more on protecting livelihoods dependent on natural resources rather than on ideas of protecting wild lands, endangered species, and biodiversity, which motivate Western environmentalists"
> (Boyle 1998, p. 103).

The author would argue that is the case for Malaysia as well, as knowledge and awareness on environmental issues have been slow to catch on and participation has not been very active[98] (Author's observation; Interview with NGO representative, 12 Feb 2014; Inteview with NGO representative, 11 April 2014). In addition, as the author had discussed in Part 1 of this chapter, Malaysia's development plans have been primarily focused on achieving economic growth.

Drawing from some of the broad cultural characteristics of Southeast Asian countries that Boyle addresses in his research, the author has identified from personal experience as a Malaysian and from other literature on Asia the key

[98] Some of the reasons for lack of participation has been discussed in Chapter 5, and will be further discussed later in this chapter.

cultural traits that represent Asian or Eastern culture generally, and Malaysian culture specifically.

4.3.3. *Cultural Traits of Malaysia*

The author will discuss some key cultural traits typically found in Asian or "Eastern" countries that are practiced in Malaysia, with specific focus placed on the cultural characteristics of the native Malays. The author has chosen to focus on the broad cultural characteristics of this specific ethnic group as they account for more than half of the population in Malaysia, hence the cultural traits typically linked to Malays can be considered as the dominant culture that is widely understood, if not adopted and practiced by most Malaysians, including those from other ethnic groups. The Malays also dominate the public sphere of politics and Government in the country, and as this research intends to propose a policy framework at Federal level, it would be relevant to consider the key aspects of Malay culture in order to identify some of the culture-related challenges that may be posed in seeking to implement better public access to information and participation in environmental matters. Finally, the author chose to scope in on Malay culture in particular as her own personal experience and association to this ethnic group would enable her to provide authentic insights into general Malay culture and mentality[99].

[99] The author would like to point out that Boyle (1998) had also acknowledged the presence and roles of other ethnic groups in Malaysia but explained that as his study is focused on the implementation of EIA and is thus concerned with national political and bureaucratic behavior and norms, he decided to focus on the nature of Malay culture (p. 98). The author agrees with this approach and is also of the opinion that her decision to focus on the Malay culture would be similar to someone who examines typical "English" traits, even though England is multicultural.

Below, the author discusses the key cultural traits of Malaysia that have been identified under shared themes. Some examples of Western practices will be mentioned, thus to avoid overgeneralizing "Western" culture, the author has decided to use examples of the common cultural traits found in the United States of America (U.S) to illustrate how it may (or may not) share the cultural traits of those practiced in Malaysia. The reason for choosing the U.S as an example of "Western" culture is simply due to the fact that it was where the foundations of EIA were established (Ogola 2007, p. 1). It was also the first country to enact EIA legislation, which was reported to have been successful and beneficial to the environment (Miller 2013). It might, therefore, be helpful to this research to learn of some cultural traits that are practiced in the "land of the free"[100], where access to information is supported by laws and public participation has been active as well as instrumental in promoting environmental protection. Additionally, the author opines that the U.S success and global dominance in the media and communications industry, including film (e.g. Hollywood) and technology (e.g. Silicon Valley) have transmitted around the world an array of influential symbols, images and glimpses of behaviors that are commonly labeled in Asian countries like Malaysia as the "Western" way of life. This is important to note because cultural practices of the U.S, though arguably different from those found in European countries, have tended to be perceived in many parts of the world as representations of Western culture.

[100] This term refers to the last line of the lyrics in *The Star-Spangled Banner*, which is the national anthem of the U.S. where it states, "…And the star-spangled banner in triumph shall wave [,] O'er the **land of the free** [emphasis added] and the home of the brave!" (Key 1814).

4.3.3.1. ***Status, Hierarchy and Power Relations***

Malaysian society is oftentimes described as being status-conscious[101] (Richmond 2010, p. 46). As Boyle (1998) explains, "Status is a pervasive organizing principle in all social relationships and is based on such criteria as family background, age, education level, professional rank, and the number of one's subordinates or dependents. Maintaining and enhancing one's status is a principal motivational factor, because a person's power influence rises or falls in concert with it" (p. 98). Indeed, this is a society in which hierarchy is acknowledged and one's position in it is generally understood, especially given the presence of royal families and the honorific titles bestowed by His Majesty the King of Malaysia and State sultans on selected individuals. According to Boyle, traditional Malay society was "strongly hierarchical with ruling and subject classes, an acute consciousness of rank and status, and an unquestioning loyalty of subjects to rulers; subjects were obliged to serve rulers without questioning the rationality of or motives behind their wishes. In return, rulers provided protection. Today, Malaysians continue to rely on structures of status and hierarchy to establish and reinforce power relationships and to deliver the benefits of an industrializing society" (Boyle 1998, p. 99).

While Boyle's observation was reported in 1998, the author's personal experience and observation of Malaysian culture today (in 2016) would agree that to some extent, such perceptions of status and hierarchy are still very much present in the mindsets of many Malaysians. This can be seen in the way people generally respond and interact with those who have been awarded with honorific

[101] "Status-conscious Malaysians love their honourable titles" (Richmond 2010, p. 46).

titles, and who are considered as “very important persons” (VIPs). In Malaysia, individuals who are awarded by His Majesty the Yang di-Pertuan Agong or State sultans with honorific titles, such as “Dato” or “Tan Sri”[102], will highly likely experience a demonstrable amount of special treatment in various places such as hotels, restaurants, airlines, and basically any place that forms a part of the service industry (Author’s observation). The display of “respect” to the “VIP” is an expected form of behavior that most Malaysians will practice (whether or not one actually regards the “honourable” person with sincere respect) as a way of avoiding offense or preventing embarrassment to the person of higher status.

Thus, in organizing any official events or even weddings where VIPs have been invited to attend, it is extremely important to ensure that the VIP’s title is correctly included in any speech or announcement. In fact, this is closely related to the importance placed on following proper protocols and etiquette. Failure to address a VIP by his or her correct title(s) may result in a socially embarrassing situation, especially if the person being addressed takes serious offence to the mistake that was committed. As Boyle observed, “People are keenly aware of their relative place in the hierarchy and of their status vis-à-vis others, and deference is commonly expected by and granted to people of higher status” (Boyle 1998, p. 98). This is an aspect of Malaysian culture that could be influential in how people might choose to participate in environmental decision-making processes. For example, in a group discussion, a person who considers his or herself of “lower status” than others, may resort to staying silent on an

[102] To understand more about honorific titles in Malaysia, please refer to the following link for further details and explanation: <http://www.oxfordbusinessgroup.com/overview/title-matters-navigating-use-honorifics-and-their-lineage> (Oxford Business Group 2014) [Accessed 12 March 2016].

issue that actually concerns him/her so as to avoid confrontation with another person who is "respected" or holds a higher status.

In a Western country like the United States, the notion of status may be associated with economic wealth and perhaps due in part to the capitalist ideology that has been strongly promoted and practiced in the country, economic wealth is oftentimes a measure of one's success in life[103]. This achievement of success and thereby status, however, does not always translate to receiving or having expectations of receiving royal-like treatment (Author's observation). In a country founded by immigrants, one of the cultural traits of the US is to emphasize the importance of determination and hard work in striving for the "American dream"[104], with many believing the notion that everyone has an opportunity to succeed in life, no matter where one comes from. Regardless of the American drive to acquire financial success and status, power distance in the US is reported to be much lower than that of Malaysia. Hofstede explains that in American organisations, "hierarchy is established for convenience, superiors are accessible and managers rely on individual employees and teams for their expertise" (Hofstede et al. 2010). In the US, equality governs most interactions between people and their leaders, therefore Americans generally expect to be kept informed and that they have a right to participate in political and professional decisions. The author has also observed that holding a title or high position does not necessarily protect someone in the US from receiving open criticism and

[103] According to Hofstede's model, the United States is a society driven by competition, achievement and success and explains that Americans typically "'live to work' so that they can obtain monetary rewards and as a consequence attain higher status based on how good one can be". Refer to <http://geert-hofstede.com/united-states.html> [Accessed 20 July 2014].

[104] Refer to the following link for information on the use of this term:
<http://america.day-dreamer.de/dream.htm> (Michels 2016) [Accessed 15 February 2016].

scrutiny from others. For example, it is quite common in the US for mass media to criticize, question, and make political satires as well as parodies (adopting even the use of vulgar language at times) of their politicians, business leaders, and other public figures or celebrities. In Malaysia, doing so is risky as it could affect one's social standing, networks, career opportunities, and possibly land the person in hot water[105].

4.3.3.2. ***Social Relations, Communication and Expression***

In his book, *Social*, Matthew Lieberman (2013) shares his exploration of how the human brain is built to connect individuals to one another. Lieberman used tools such as functional magnetic resonance imaging (fMRI) to further understand the close links between physical pain and "social pain"[106], as well as the devastating effects of "social rejection". Lieberman (2013) argues, "We are wired to be social. We are driven by deep motivations to stay connected with friends and family. We are naturally curious about what is going on in the minds of other people. And our identities are formed by the values lent to us from the groups we call our own. These connections lead to strange behaviors that violate our expectation of rational self-interest and make sense only if our social nature

[105] For example, Zunar, a Malaysian cartoonist, is known for expressing his anti-Government stance and political views through cartoons. He was arrested for tweeting a cartoon he created that appears to depict the involvement of corruption in the judicial ruling of the case involving Anwar Ibrahim. Details of the arrest were reported in various media sources, including the Guardian, which can be referred to in the following link: <http://www.theguardian.com/world/2015/feb/11/malaysian-cartoonist-zunar-arrested-for-criticising-anwar-ibrahim-ruling> (Agence France-Presse (AFP) 2015b) [Accessed 6 Sept 2015].

[106] Lieberman describes social pain as "pain of a loved one's dying, of being dumped by someone you loved, or of experiencing some kind of public humiliation in front of others". According to Lieberman's observations, the reason why people associate such life events with the word "pain" is because "[w]hen human beings experience threats or damage to their social bonds, the brain responds in much the same way it responds to physical pain" (2013, p. 40).

is taken as a starting point for who we are" (p. ix). From the author's experience as a Malaysian, the necessity to connect to one another is inherent in Malaysian culture and communities. Indeed, social rejection can cause severe "social pain" in a Malaysian community. While achieving status through wealth and/or titles may allow one to move up the social ladder and gain better life and career opportunities, the author has observed that it is also crucial to Malaysians (as individuals and family units) to attain a good reputation in society in terms of being respected and regarded well by others in one's community. Hence, the practice of "saving face", that is to act in ways that would protect one's honor and reputation as well as avoid from experiencing instances of "losing face" becomes a cultural trait that is built into the customs and tradition of Malaysian society.

Part of avoiding social rejection or embarrassment caused by actions that could lead one to "lose face" is to make efforts of communicating in a manner that would not offend others and to limit any unnecessarily strong expression or opinions. For example, Boyle explains that the Malays, just like Indonesians and Thais, "aspire to avoid harshness and to seek gentleness and refinement in human relations" (Boyle 1998, p. 103). He further notes, "difficulties in the relations between the Malays and Chinese have made avoiding controversies that might arouse passions into a cardinal rule of governance to the point that troublesome or delicate ethnic issues are officially taboo as subjects for public discussion" (Ibid).

Raybeck and De Munck (2010), who conducted two semantic differential studies on cultural values and modernization in the Malaysian state of Kelantan, first in 1969 then in 2001, reported that in rural areas, "[t]he village was usually

the largest unit in which a Kelantan Malay was involved in daily social interaction, and it was there that peasants established and maintained their identities. Most face-to-face interaction occurred within the village: it was the place where most friendships were formed and where the individual was socialized" (p. 100). They go on to explain that "Kelantan Malays were inordinately sensitive to interpersonal relations and that they placed considerable emphasis on the importance of maintaining international harmony, *sesuai*, within the village context…Participants in social interaction were expected to act with refinement…This meant that their actions should reflect a concern for others and should avoid behaviours which were apt to lead to conflict" (2010, p. 100).

A study conducted by Dohlnér & Grom (2006) found that one of the many differences between Swedish and Malaysian cultures is the importance for Malaysians to not "lose face". According to the information relayed by one of the participants interviewed, Dohlnér & Grom (2006) learned that "to prevent this [losing face] you cannot raise your voice at someone in a public place or tell them off. Instead you have to speak to the person in private, so he/she [does] not make a fool of himself/herself. Victoria Sundin stresses that it is essential as a foreigner to be humble and respect this. She further states that this is also important to keep in mind when training the employees. Even if they do not understand they will probably say that they do when asked, in order to not [lose] face" (Dohlnér & Grom 2006, p. 40)[107]. Indeed, the author has observed that Malaysians tend to place a rather high level of importance on how others,

[107] Refer to http://www.diva-portal.org/smash/get/diva2:4292/fulltext01.pdf (Dohlnér & Grom 2006) [Accessed 18 July 2015].

especially those in their community, perceive them. A study conducted by Sumaco et. al. (2014) reported that in their research, one of their Malaysian participants stated, “Our culture teaches us to be more conservative because confrontation will make you appear to be rude. We want to be polite. Even if we saw something wrong, we would not speak up. We will keep it to ourselves. We have concept of minding your own business” (p. 96-97). Although not all Malaysians may display this cultural trait or practice it at all times, the author as a Malaysian concurs that this aspect of Malaysian culture is still generally apparent among many members of Malaysian society today.

This cultural trait of wanting to appear polite by keeping opinions to oneself and minding one’s own business can be counter-productive in addressing environmental concerns. With regard to environmental access rights, the people’s eyes, ears and voices are needed to help law enforcers and authorities identify where the problems lie and who the perpetrators may be. They are also needed to help inform policymakers in the decision-making process, and to provide ideas and insights on situations that the Government may have overlooked, not considered as important enough, or not be aware of in the first place. Indeed, Boyle (1998) observes that there exists “the compulsion to contain inner feelings, to avoid any overt criticism, conflict, disagreement and controversy, and to conduct all interpersonal relations in a smooth, unthreatening manner. Self-control is considered a preeminent virtue. Personal emotions should be hidden with social graces, flawless etiquette, and perfect manners. Thus, the Southeast Asian style of dealing with unpleasant or even dangerous situations is avoidance and silence, repressing emotions in the hope that the

problem will go away if matters are smoothed over" (Boyle 1998, p. 101-102). Ainul Jaria Maidin (2006) shares a similar view and argues that "Malaysians failed to realise that environmental protection is not a matter exclusively to be dealt with by the government, but a matter that requires full social participation to ensure successful results". The author would like to note here that the approach of "avoidance and silence" in hopes that a problem would go away, was also observed in the Rare Earth Controversy (which will be discussed further in Chapter 6), wherein a Lynas Corp representative (Interview, 24 Feb 2014) mentioned that some of them were of the opinion that remaining silent on social media could de-escalate the situation and help to prevent further conflict. It was hence considered better to keep oneself quiet and wait until the "storm" subsided.

As mentioned earlier, avoiding conflict and shame in Malaysian society is linked to maintaining social connections. Boyle (1998) explained that in structured societies such as that seen in Malaysia, "personal relationships are relied on for getting things done. These relationships often take a patron-client form where the patron provides protection, security of position and income, social connections, or economic or other opportunities in exchange for deference, loyalty, support, gifts, or labor from a client or dependent…[I]t has become almost impossible to become wealthy without personal political connections" (Boyle 1998, p. 100). Eastern cultures, like those of Malaysia, tend to be collectivistic, where the commitment to group and group's opinion was important while Western cultures have been described as being more individualistic (Hofstede 2010; Chuah 2010). Sumaco et. al. appears to agree with this as well,

stating that “Malaysians are more group oriented, they want to voice their opinion as a group, compared to Western culture where the people are braver to voice up individual opinion” (p. 97). Hofstede (2010) reports that the US is one of the most individualist cultures in the world, and has a low score in power distance, which is contrary to that of Malaysia’s (see Figure 14).

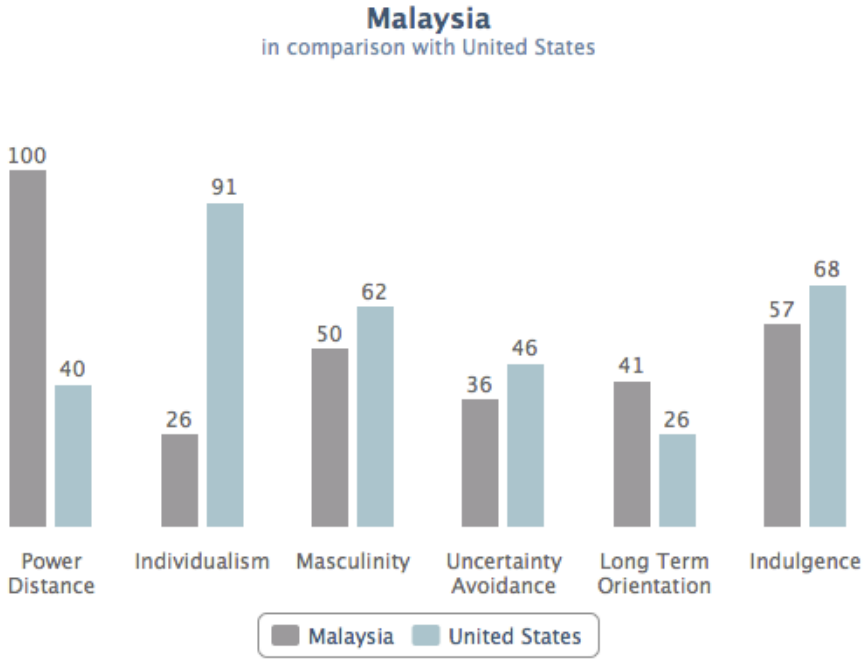


Figure 14: The cultural dimensions of Malaysia in comparison to the U.S, according to Hofstede (2010).

Amongst the findings, Hofstede discovered that the US is premised on the concept of “liberty and justice for all”, that while hierarchy is established for convenience in American organisations, superiors are accessible, and that information is shared frequently among managers and employees while communication is informal, direct and participative to a degree (2010).

This difference in communication and participation methods can be related to the author’s own personal experience of attending schools in the US and in

Malaysia. The author observed that when her classmates in Malaysia were given a question to answer by teachers in the classroom setting, most of the hands were raised by top students who excelled academically and know the correct answer, whereas in the American schools that the author attended, most students in the classroom were comfortable at raising their hands to answer questions, even if they made mistakes. More interestingly, the author observed that students in the US were allowed, if not encouraged, to provide their opinions, especially if it challenges their teachers, as long as it is discussed or debated in a professional manner. While this may be the case in the author's limited observation, others have also reported similar behaviors that are commonly observed among students who come from Eastern cultures. Dr. Chuah, who is a Malaysian of Chinese descent, lectures at Nottingham University Business School and reports his impression of the East-Asian students he has taught, explaining why they tended to be quiet and passive in the classroom:

> "East-Asian students learn by listening; they want to fully absorb and understand what is being taught. They don't feel that they have the 'right' to question what is being taught until they have completely understood all aspects of it. Moreover, they avoid being critical out of respect for the teacher, so that the teacher will not lose 'face' in front of other students, and to preserve harmony in the classroom, so that everything runs smoothly. There is also an element of preserving their own 'face', in case they are mocked for asking a 'stupid' question" (Chuah 2010).

4.3.3.3. ***Religion and Beliefs***

The major ethnic groups present in Malaysian society are usually linked to the religions that are predominantly practiced by the members of these respective groups. Indeed, in Malaysia, most Chinese are Buddhists and most Indians are Hindus, and for most of the Malay Muslims (who make up over 60% of the population), Islam is a core aspect of their Malay identity. This was made more apparent in the Constitution's definition of Malays as Muslims, and Islam as the religion of the federation[108]. Religion, therefore, correlates strongly with ethnicity, hence in Malaysian culture, one learns never to offer beef to Indian acquaintances, or wear a white outfit to a friend's Chinese New Year party, or present a bottle of wine as a gift to a Malay upon arriving at an open house event (World Culture Encyclopedia 2016). As Leong (2014) explains, "[w]ithin Malaysia, ethnicity impacts on how educational and employment opportunities are apportioned, how religious beliefs and practiced predicate lifestyle and behavioural expectations, and even how the fundamental human rituals of birth, marriage and death are performed. To imagine Malaysia as a nation is also, then, to think of the ethnicities that inhere within" (p. 123).

Insensitive actions or words directed towards religious symbols, buildings and rituals are oftentimes carefully avoided in Malaysian public lest one risks appearing disrespectful and offensive, or even worse, cause inter-ethnic tensions between members of different groups. Religion, therefore, holds an important role in the personal, social, and political lives of Malaysians, not only in providing

[108] According to Khoo (2005), "The Constitution provides for Islam as the official religion of the country, but Malaysia is a secular state that maintains freedom of worship with one critical proviso: non-Islamic proselytization among Muslims is forbidden, as is any organized attempt to convert Malays and Muslims to other religions" (p. 5).

spiritual guidance but also in shaping part of the people's identity of themselves, and how they interact with one another, including knowing where the social limits lie in such interactions. Simon Richmond observes that "[i]ncreasing Westernisation and the pace of modern life are changing the cultures of the region, but traditional customs and religious values remain strong" (Richmond 2010, p. 47). It is, indeed, not uncommon in Malaysia for people of respective religions to unite and pray in the event of a major accident, national crisis, international conflict, or natural disaster, and for members of the royal family, politicians, public officials and other public figures to join them in doing so. This was witnessed by the author on many occasions, such as during the floods that occurred throughout late 2014 into early 2015 (which will be discussed in Chapter 7).

Religion has also been associated with environmental issues. Nature and its inhabitants are usually regarded by believers of the world's major religions as part of God's creations, and while humans may benefit from what nature has to offer, there is a general acknowledgement that an amount of care and protection should be accorded to it, otherwise humanity would suffer from its destruction (GreenFaith 2016). In Malaysia, the author observes that religious lessons taught on respecting and caring for the environment has largely failed to translate into the actions of the people, who have continued to openly practice environmentally-destructive behaviors, such as throwing garbage into the river, without showing much remorse. Nevertheless, religious perspectives on the environment continues to be discussed and mentioned in Malaysia from time to time, sometimes as a way of appealing to the people to leave their destructive

ways behind, if not for humanity, then for God. Prime Minister Najib Razak attempted to stir the spiritual conscience of the people during the major floods of 2014 by stating that the flooding event was "a lesson for us to take action to ensure sustainable development and a reminder from Allah SWT to us actually, so we must remember the guidance contained in the Quran that humans are actually the cause, God will not be cruel to us but we are being cruel to our own selves" (Bernama 2014d).

In the West, on the other hand, Stourton (2015) reported that in there has been a decline of religion, and highlighted the various surveys that found a decrease in religious association in recent years, especially among young adults. The US has been perceived as being one of the most religious developed countries (Stourton 2015; Gao 2015). According to the Pew Research Center (2015), "the United States remains home to more Christians than any other country in the world". However, the numbers of religiously affiliated Americans have been reportedly declining (Voas & Chaves 2016). Besides, in the public sphere, the US practices a secular form of Government, where there is a separation between church and state. In Malaysia, on the other hand, religious symbols and practices are present in most, if not all, of public life. For example, prayers in the form of du'as[109] are increasingly delivered before the commencement of any Malay-hosted events and ceremonies, the lion dance continues to be performed for important Chinese occasions including at the opening of a business or new building, and significant religious festivities

[109] According to Aisha Stacey (2013), "In Islamic terminology *dua* is the act of supplication. It is calling out to God; it is a conversation with God, our Creator, our Lord, the All Knowing, and the All Powerful. In fact the word is derived from the Arabic root meaning to call out or to summon". Please refer to the following link for more information: <http://islam.ru/en/content/story/what-dua> [Accessed 18 Feb 2016].

celebrated by the major ethnic groups in Malaysian society are officially recognised in the public calendar as national holidays. It is thus not surprising to encounter public figures and leaders appeasing the people in times of crisis by turning to religion and/or mentioning the name of God.

4.3.3.4. ***Politics***

Adding to the complex cultural dimensions present through Malaysia's links between ethnic identity and religion are political affiliations, which have also been strongly correlated to ethnicity. The Alliance Party coalition (*Parti Perikatan*), which formed the first Government of Malaya before independence in 1957 was an inter-communal coalition comprising of the politically predominant United Malays National Organization (UMNO), the Malayan (subsequently Malaysian) Chinese Association (MCA) and the Malayan (subsequently Malaysian) Indian Congress (MIC) (Liow & Leifer 2015, p. 102). Its direct successor, the Barisan Nasional (BN, or "National Front"), has continued to adopt this inter-communal characteristic of the coalition, and has over the years expanded to comprise of thirteen component parties (as at November 2015). Since independence, BN has been the ruling party coalition in Government to this day. Therefore, political discourse and participation in Malaysia has been taking place under this unique model of what many have termed as "racial politics" or what Khoo (2005) describes as "a political framework of ethnic representation and interethnic power sharing" (p. 1). One of the effects of this that the author has observed is that many Malaysians have, over the years, associated the well-being and, to some

extent, “survival” of their ethnic groups with the well-being and survival of their ethnically-divided political parties. As explained by Leong (2014), “Malaysians have from the very establishment of their nation been accustomed to think of themselves as ‘naturally’ divided into three main ethnicities: Malay, Chinese, and Indian. Their postcolonial history has dictate their political parties to be organized along these lines and the same divisions have been instilled into their structures of life through governmental policies that identify citizens as members of ethnic communities before all else. Ethnicity is, thus, a major signification within the Malaysian social imaginary, relevant and typical because it is intertwined with nearly all other major shapers of life” (Leong 2014, p. 123).

Due to the close links between politics and ethnicity, one’s standing on a particular issue can be greatly influenced by one’s loyalty or association towards a political party. The author believes that this may include one’s stance and extent of participation on environmental matters. It might be possible that in a situation where members of a political party proposed a certain development project or programme to be carried out, some people who closely associate themselves with that party may feel naturally inclined to support the project or programme as well, regardless of its positive or negative effects on the environment, in order to display or prove their party loyalty.

However, while race-based politics may have been the working formula in balancing the interests of the diverse ethnic groups of the country around the time of independence, there are now signs indicating that Malaysians may be steering away from aligning themselves with political parties based solely on

ethnic grounds[110]. Nevertheless, politics, specifically those related to race, continue to be entrenched in the minds and behaviors of Malaysians, so much so that many issues are often linked back to how well or badly the leaders or members of a political party addresses them. This subject of discussion will be revisited in the author's analysis on the major floods in Chapter 7. With regard to the research topic, this is important to note as race-based politics may sometimes appear in discussions involving access to environmental information and public participation. For example, rural communities that are predominantly Chinese (or Malay or Indian or Orang Asli) may express anger towards the political party ruling in their state (or the Government) for approving a project that greatly impacts their environment without their knowledge or consent, but the issue could be made more scandalous if the political party happens to represent an ethnic group that is not theirs. Party association and loyalty, therefore, can play a major role in how the public views and expresses their stance on environmental-related issues in the country.

4.3.3.5. ***Patriotism***

In Malaysia, patriotism is instilled from a young age and has oftentimes been used to allow ethnic differences, which have been tied to religion and politics, to unite in a shared love of country (or sense of "*cintakan negara*"). Independence Day (or "*Hari Merdeka*") is an event celebrated by all Malaysians and keeps them reminded of the colonial history experienced by the country

[110] Former MP and former UMNO Supreme Council member, Datuk Saifuddin Abdullah, was reported to have stated that "Malaysians in general have disregarded the ethnic background of their choice candidate in the elections for the past two elections" (Lin 2015).

before its independence. Hence, regardless of the people's differences in racial background, cultural traditions, beliefs, and political associations, most Malaysian citizens continue to identify themselves as being Malaysian. As Leigh and Lip (2004) explains, "outside Malaysia, self-identification customarily places country above ethnicity and they introduce themselves not as Malay, Chinese or Indian but as Malaysian. National identity and ethnic identity therefore become two separate identities adopted by Malaysians. Thus, the concept of nation (*Bangsa Malaysia*) outlined in Mahathir's Vision 2020 is already a contingent reality" (p. 303).

The West may also display its own form of patriotism, but members of the public do not usually consider criticism against the Government or leaders as a form of harming the name or image of their country. The US, for example, has an expressive culture of patriotism, with many patriotic symbolisms in its media and through the behavior of members of the public. However, people are free to make parodies of the Government, and the White House even holds events with rosters, in which the President is allowed to be publicly made fun of, albeit in a glamorous setting. In Malaysia, this practice is usually avoided.

4.3.3.6. ***Internet and ICT***

The rapid industrialization and development of communications infrastructure in Malaysia has contributed to the creation of a new cultural dimension for the country and its people. The author has observed that advancements in technology, such as in computers and smartphones, the

immediate acceptance and adoption of the Internet, and the consequent rise of social media and mobile apps over the past five to ten years in Malaysia have led to the extension of Malaysian culture from the physical world to the virtual realm, and vice versa. With 90 percent of Malaysian Internet users having access to social media sites, Malaysians were also found to have the highest average number of "friends" on social networks in the world with an average of 233 friends compared to the average Facebook user having 130 friends (Kemp 2012; Muniandy & Muniandy 2013, p. 71 & 74). Therefore, online activities and communications have grown to become a significant part of Malaysian life and culture, with one third of the country's Internet traffic expected to be caused by social sites (Muniandy & Muniandy 2013, p. 72). It has also been increasingly influential in the decision-making process, such as what was seen in last two General Elections. Indeed, it was when BN experienced its worst election in 2008 that the Government began to realise just how important it has become for political campaigns to engage the public online as much as they would offline. Then Prime Minister, Abdullah Ahmad Badawi, admitted, "We didn't think it was important. It was a serious misjudgment. We thought that the newspapers, the print media, the television were important but young people were looking at text messages and blogs" (New Straits Times 2008). This was also observed by Asohan during the General Elections of 2013 as an effective way for Opposition parties to influence voters: "The Internet, especially social networks, was a key battlefront in the general election for the Barisan Nasional ruling coalition and its opponent the Pakatan Rakyat. With most of the mainstream media owned by

Barisan political parties, the Internet was the only medium the Opposition could use to reach out to voters" (Asohan 2013).

The author finds that through online anonymity and the ability to connect almost anywhere across the globe, people in Malaysia and allover the world have found ways to gain information from non-mainstream sources, and to express their views on various matters without fear of being stifled, punished, or having their identities exposed. Through online forums, group text messages, Facebook posts, Youtube comments, crowd-sourcing platforms and invitations to "share", "like", "♡", "+1", and not to mention the ever-popular use of "#hashtags", the Malaysian public has become more exposed to new forms of information and participation, all at the tap of their fingertips. From having the opportunity to obtain and disseminate information, participate in providing opinions on national as well as international issues, and interact with others on shared interests and concerns, Malaysians are also learning how to communicate their ideas and views with other users online, as well as how to mobilize themselves. Social and environmental movements that pop up in Malaysia these days may arguably be created and organised online, before being manifested on the streets where physical voices become heard. Indeed, Web 2.0, as Fauziah Ahmad et. al. (2012) explains, "has changed forms of communication and interactions among individuals. The application through user generated content has transformed users to be content producers from content consumers supporting the democratization of knowledge and information" (p. 71). The author's survey reflects the popularity of social media in Malaysia in recent times as well. In the context of the research topic, the participants were asked where they obtained

heir knowledge and information on environmental issues “10 years ago” and “Now”. Participants indicated that 10 years ago, the top five sources they would refer to were television (**62.5%**), magazines (46.88%), printed newspaper (43.75%), word of mouth (43.7%) and academic institutions i.e. through lectures and classes (40.63%). This was a stark difference from their responses on the top five sources they would refer to now, which are social media (**81.25%**), online newspaper (68.75%), environmental-related websites (65.63%), television (56.25%) and word of mouth (37.5%). What was also surprising to the author was that “academic institutions” (at 15.63%) ended up scoring lower than “blogs” (which was at 21.88%). Again, the author cautions that the survey’s sample size is not representative of the entire country (and is thus an area that requires further research), however it is an interesting snapshot that may indicate Malaysians are increasingly turning to digital sources to obtain information, but are doing so through “social” sites. Indeed, Westerman et. al. (2013) also found that social media are increasingly being used as an information source. They explain that as an example, people use social media to seek health information and on serious topics, “such as circulating up-to-the minute information about cholera outbreaks in Haiti and identifying clean water sources during this outbreak” (p. 1).

This could be a subject of concern because the information posted through social sites are loosely, if at all, regulated (by the host site) and may not fulfill any requirements for authenticity and credibility, yet it could also present opportunities, as people would be able to obtain alternative information and uncensored points of view, as opposed to the information found in mainstream

sources, and allows people to gain immediate updates from the ground, which the author will discuss in Chapter 7.

4.4 CHAPTER SUMMARY

This chapter has provided an overview of the scenario in Malaysia with regard to its key development pursuits including Vision 2020 and the Government transformation programmes, the main environmental laws and policies, the country's socio-political setting and also the cultural traits of Malaysia that underlie its system of communication, social relations, politics, and hence governance.

In Part 1 of this chapter, the author has discussed how the priority placed on rapid economic growth may have contributed to the persistent environmental problems faced in Malaysia today, but also provided a brief summary of the stages of environmental laws and policymaking throughout the country's phases of development, to show how Malaysia had made efforts to integrate its concerns over environmental issues into its development plans. As explained in Part 1 of the chapter, efforts to tackle these environmental problems have been translated into law, such as the EQA 1974, and also through policies, such as the National Policy on the Environment (2002). But while such efforts may help to curb some human activities that lead to environmental harm, they have been reportedly ineffective in solving the environmental issues that continue to emerge in Malaysia. **The author's investigation discovered that few of the policies for**

the environment contain elements that promote access to environmental information and public participation in environmental decision-making. While these few policies may mention good intentions in raising awareness, educating the public on environmental issues, and including communities in decision-making processes, the reality is that much more strategic actions would be required for the public to be truly engaged and involved in addressing environmental matters, as well as to participate in environmental decision-making.

The author's research and analysis in Part 1 of this chapter is relevant in the context of the research topic as it demonstrates that in Malaysia, efforts have been made to integrate, wherever possible, sustainable development into the country's vision and national plans, while certain elements of access to information (such as increasing awareness on the environment) and public participation (such as engaging with local communities), are, at the very least, acknowledged in some of the country's policies. The Government's transformation programmes also offer an opportunity to review and amend the country's "top-down" approach towards governance and decision-making, into one that is more citizen-centric and participatory, which would be beneficial to fostering transparency and inclusivity, and thus promote access to information and participation. Although the transformation programmes are still a work in progress, the author regards them as a positive initiative to have in the country, as they reflect the Government's recognition of this crucial aspect of sustainable development, and highlights the importance of not only changing the way the Government connects with the public and addresses the people's concerns, but

also for the public to see themselves as valuable contributors who can take part in providing useful suggestions for improvement.

In exploring the role of culture and the possible influence it may have on how people access environmental information and participate in environmental decision-making, the author identified and discussed in Part 2 of this chapter, the key cultural traits found in Malaysian society, as well as some "Western" examples from the US. The examples from the US have highlighted some of the ways in which Western cultural traits may have influenced the implementation of current models of environmental democracy, which were arguably catalysed in the West through introduction of the EIA. Therefore, the author has argued that Malaysia would require a form of implementation that is different from the Western mold. For example, public consultations in the form of townhall meetings may not be very effective in the context of Malaysia, as a majority of the people who attend may remain quiet and passive in the decision-making process due in part to cultural reasons.

However, it is important for policy-makers to recognize that the absence of public voices in a public participation session does not mean that Malaysians are not concerned over the impact of development on their environment or that they are agreeing to everything that is being done by the Government. In 1985, Scott, who drew on a study of the beliefs and behaviors of Malaysian peasants, argued that "the lack of overt activism by subordinate groups does not necessarily reflect acceptance of the existing social order. Although the poor may view the constraints that they face as inevitable and internalize them, they may also have a strong sense that the status quo is unjust" (cited in Rao & Walton 2004, p. 23-

24). This sense of injustice, which Rao & Walton (2004) goes on to explain, is "coupled with a recognition of the inevitability of fate, results in subtle, 'everyday' forms of resistance that serve to moderate the authority of dominant groups without completely overturning the system. Moreover, resistance has over the centuries often turned to revolution—as can be seen in the history of social movements, protests, and revolts that have sought to overturn existing social systems" (Rao & Walton 2004, p. 23-24).

At the time of writing (November 2015), the author has witnessed the reporting of movements and revolts in Malaysia, which may be an indication of the transitions occurring in Malaysian culture with regard to participation. Street protests, which were not commonly practiced before and hence not usually associated with Malaysian culture, have started to become more frequent in recent times. As the phenomena appears to be inevitable and does not appear to be going away anytime soon, it is vital for the Government to provide information as effectively as it can from official sources, so that the public does not need to depend on social media for important information. It is also crucial that the Malaysian public have better opportunities to participate in decision-making processes, so that they do not have to resort to conducting street protests (that cause social strains among the diverse groups) to have their voices heard. Doing so, the author believes, may arguably contribute to lessening the Government's chances of "losing face".

In this regard, Malaysia's culturally unique characteristics would require a specially designed framework for enhancing access to information and public participation. While the framework could adopt some of the structure and

solutions from existing Western (and of other non-Western countries') models for environmental governance and access rights, it would need to be custom-made to fit into the Malaysian mold, so that it could effectively deliver its objectives, and likely be more accepted by the Government and the public.

In the next chapter, the author will delve further into the specific topic of public access to environmental information and participation in environmental decision-making, and explore the extent to which the Malaysian public is provided with such access.

CHAPTER 5

PUBLIC ACCESS TO ENVIRONMENTAL INFORMATION & PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING IN MALAYSIA

> *"Ultimately, citizens are the main beneficiaries of sustainable development: economic development and growth, environmental protection and social equity. It is therefore natural that citizens should be consulted, and play an active role, if not the principal role, in the decision-making process on matters regarding these three main components of their living environment"* (Costi 2003, p. 306).

5.1 INTRODUCTION

This chapter sets out to explore the extent of Malaysian[111] public access to information and participation in environmental decision-making. Malaysia is neither a member country of the United Nations Economic Commission for

[111] To clarify, the focus of this research will be placed on exploring "access" provided at Federal level to the public in Peninsula Malaysia only. The author decided upon this as the two states located in "West Malaysia" (that is Sabah and Sarawak), on the island of Borneo, consist of significantly different societies in terms of majority ethnic composition, cultural practices, languages, laws, and special rights granted to their respective State Governments under the Federal Constitution. In addition, the author is not sufficiently experienced or accustomed to the cultural practices and rituals of Malaysians who reside in Sabah and Sarawak. The author's use of "Malaysia" in this thesis will thus refer to Peninsula Malaysia. Nevertheless, the author would like to reiterate that this decision was made for the purpose of fulfilling the research objectives within its scope and limitations, and is not meant to disregard or disrespect the States and communities that exist in West Malaysia, as they are indeed perceived by the author as Malaysians, and are of course a part of Malaysia.

Europe (UNECE) nor a signatory to the Aarhus Convention (1998). It is, however, a signatory to the Rio Declaration on Environment and Development (1992), and thus recognises Principle 10 of the Declaration[112], which in part encourages governments to provide the public with access to information and participation when managing environmental issues. *The question is: Are the public in Malaysia provided with access to environmental information and participation in environmental decision-making?*

As previously mentioned, this research will focus on investigating access to information and public participation in environmental matters that are made available at Federal level to the public in Malaysia, particularly one that the Government is legally obligated to provide[113]. Through this chapter, the author will identify whether any venues for environmental access (in the context of this research) are present through existing laws, national policies, or Government public services that would enable Malaysians to obtain the environmental information they need, and, if they so wish, to participate in any environmental decision-making process. In doing so, the author hopes to gain a deeper understanding on the extent of access granted to the Malaysian public, discover whether any deficits exist in the current system of access and ascertain if any

[112] Malaysia's efforts to integrate environmental protection and concept of sustainable development into its development plans were discussed in the previous chapter. For more information on the active role that Malaysia played in G77 (or Group of 77, which was a loose coalition established by 77 developing countries) and in the crucial negotiations that resulted in the UN Conference on Environment and Development (UNCED), which then led to the adoption of the Rio Declaration can be referred to in Ling (2012). A report of the UNCED, in which Malaysia's attendance in recorded, can also be referred to through the following link:
<http://www.un.org/documents/ga/conf151/aconf15126-4.htm> (United Nations (UN) 1992) [Accessed 12 August 2013].

[113] While the author acknowledges that citizens may receive information on the environment from other non-governmental sources, the research will focus on what can be obtained from the Government, especially through laws and policies.

laws or policies may be posing challenges towards implementing access to environmental information and participation in the country. To achieve these objectives, this chapter will be divided into two parts. The author decided to combine these two key parts of the research topic into one chapter as they are interrelated. Indeed, public participation is dependent on access to information and thus there are areas where these two elements overlap, in theory and in practice. As discussing one element often leads to mentioning the other, and vice versa, the author thus chose not to analyse and discuss them individually or apart from one another in separate chapters. Therefore, this chapter will be divided into **Part 1**, which will explore access to environmental information in Malaysia, and **Part 2**, which will look into Malaysia's public participation in environmental decision-making. The author will then discuss some of the challenges that may be encountered in implementing these two pillars of environmental access rights in Malaysia.

5.2 PART 1: ACCESS TO ENVIRONMENTAL INFORMATION

5.2.1. *In Malaysian Legislation*

As mentioned in a previous chapter, Malaysia's Constitution, which is the supreme law of the land, does not expressly state the word "environment" nor does it explicitly grant citizens with a right to information per se. Thus, it comes as no surprise for the author to discover that the Federal Constitution does not contain any provisions that specifically guarantee Malaysian citizens with access

to **environmental** information. Nevertheless, the absence of such legal provisions in the Constitution certainly does not mean that Malaysian citizens are not provided with opportunities to submit a request for environmental information from Government authorities. Their requests may be fulfilled in some cases, but the Malaysian Government does not hold a legal obligation to meet such requests made by citizens, let alone non-citizens, as there is currently no law at Federal level that expressly requires the Government to do so. However, the country has seen significant changes in the dynamics of the people's socio-political activities, such as expressing their political views through new media (Leong 2015), and in recent years, some efforts have been made at State level[114] to introduce freedom of information laws, representing a considerable cultural shift in the sharing of information by public authorities.

The author's exploration of this research topic in the context of Malaysia found that the country does not (at this moment) have any laws that are enforced specifically with a purpose of providing the public a right to access environmental information. Nevertheless, the author's investigation into the matter has identified a few laws relating to information and to the environment that seem to grant the public with opportunities to access environmental information. They are listed down and analysed as below.

[114] While the author had mentioned that this research focuses on "access" provided at **Federal level**, an exception was made only for this particular topic regarding freedom of information laws. This is due to the fact that Malaysia does not have freedom of information laws at Federal level, therefore there are no examples of such laws applied at national level in the context of Malaysia that could be analysed. Thus, the author thought it might be helpful to examine how the very few (and very recent) information laws that exist at State level were introduced and enforced, so as to obtain an idea of what such a law applied in Malaysia could look like and the public's perception of the law (so far and if any). Besides, these laws are the first of their kind in the country, hence the author strongly felt that examining at least one of them could potentially help to inform and enrich the research findings.

5.2.1.1. *Freedom of Information (State of Selangor) Enactment 2011*

Indeed, as mentioned above, Malaysia does not have sunshine laws[115] or right-to-know laws at Federal level, but at State level, two Malaysian states – Selangor first, then later Penang, have so far introduced their own "Freedom of Information" law[116]. The Freedom of Information (State of Selangor) Enactment 2011 is the first piece of legislation in Malaysia that provides the public with an opportunity to access information held by the State Government. The purpose of this Enactment is stated in its preamble: "An Enactment to enhance disclosure of information for the public interest, to provide to every individual a reasonable right of access to information made by every department of the State Government and to promote transparency and accountability for each department in the State Government" (Government of Selangor 2011).

Nevertheless, limitations are still being faced with implementing such a law at State level, especially as it cannot be applied to information controlled by the Federal Government that may be classified as strictly confidential under the Official Secrets Act 1972 (Government of Selangor 2011, Part IV, Section 14(a);

[115] The term "sunshine laws" is mostly used in the United States, and refers to laws that require government agencies to open their official meetings and records to the general public (Dictionary.com) [Accessed 5 September 2014]. They are also referred to as freedom of information laws, open records laws, or open government and can be traced back to the United States' Government in the Sunshine Act of 1976, which requires all portions of all meetings conducted by federal agencies to be open to the public, unless they fit within one of ten exemptions, such as those that disclose classified information or trade secrets (Bullock 1977; 5 U.S.C. § 552b). The Sunshine Act can be referred to through the following link: <http://www.gsa.gov/portal/mediaId/217779/fileName/SunshineAct_R2B-x3-g_0Z5RDZ-i34K-pR.action> [Accessed 6 December 2014].

[116] The law was first tabled in Selangor, a state that is currently governed by parties of the opposition coalition, Pakatan Rakyat (PR). It was then implemented in Penang, which is also a state ruled by opposition parties. Due to the scope of this research and the recent enforcement of this Act at the time of writing (October 2015), it is unclear as to how effective or useful the Act has been since it was enforced.

Koshy 2009)[117]. Additionally, numerous weaknesses in the law may impede its effective implementation. An example could be observed in the Enactment's requirement for applicants to state the reason for and purpose of their information request (Part III, Section 6.2(d)). This provision arguably implies that one needs to have a specific motive for seeking information, and that the sole purpose of wanting to know or be informed of a specific matter would be an insufficient reason for one to be granted permission to access the information requested.

The law also states that it is considered an offence if anyone "uses any information obtained under this Enactment contrary to the reason and purpose of such application is made if the effect is detrimental" (Part VI, Section 18(1)(a)). This provision appears to suggest that one's purpose for obtaining information from the State cannot be used to cause any detrimental effects. Yet, what would be considered "detrimental", however, is not further explained or elaborated. Due to the absence of a narrow definition of "detrimental effect" in the law, the State arguably holds the discretion to define what it would consider detrimental. Therefore, if a member of the public requests for specific information to obtain knowledge on some matter but finally uses the information to reveal, for example, questionable acts committed by State authorities, it might be possible for the problems that the revelation may cause (such as the halting of a development project), to be regarded as an effect deemed "detrimental" to the State's development. Supporting enforcement could then be carried out under Part VI,

[117] In a press conference, it was reported that when asked what would happen in the case where the State Government declares a document public under its proposed FOI law, but the Federal Government deems it a secret under the Official Secrets Act (OSA), Mentri Besar Tan Sri Khalid Ibrahim stated that "federal law would supersede" (Koshy 2009).

Section 18(2) of the Enactment, which grants State authorities with the power to fine and arrest those who are found to have committed the offence, while Part VI, Section 21 makes clear the protection accorded to relevant officers of the State Government, without mention of any forms of protection for whistleblowers.

The author also notes that there are no specific explanations in the Enactment of whether or not an applicant would bear the responsibility of any "detrimental effect" caused through use of State information by third parties who had obtained the information from the applicant. For instance, suppose a piece of information provided by the State Government is used in a written article, which is published online; the information that was published online is then used by another individual or groups of people to initiate a street protest that calls for the prosecution and resignation of a leader under the State authority. With reference to the abovementioned provisions under the Enactment, could the State authorities view the effect of the street protest as "detrimental"? If so, would the authorities consider the applicant as the person responsible for the "detrimental" effect of publishing the information online, and could thus be punished under the information law? Could the third parties involved also be punished under the same law for using the State information to form the street protest that led to "effects" deemed "detrimental"?

In the current era of digital technologies and communications as well as live "status updates" disseminated through social media networks and microblogs[118], the fast act of information-sharing by members of the public has become a norm that is to be expected, especially when information is obtained on the latest news

[118] Such as that seen in the case of the rare earth controversy, which will be discussed later in Chapter 6.

and gossip. Hence, the author opines that any country or state intending to implement a freedom of information law should take into consideration the new cultures and practices of today's digitally- and globally-connected societies, so that the law could be formulated accordingly. In the case of the Selangor information law, important legal terms that could result in the punishment of an individual who chooses to share online a piece of information that was obtained legally but somehow led to "detrimental" effects, should be clearly defined to avoid vagueness in the law and possibilities for abuse of power.

With regard to Part III, Section 6.2(d) of the Enactment, **the author disagrees on requiring applicants to state the reason and purpose for requesting information from the State Government. This part of the law should be made voluntary, especially if its purpose is to enable authorities to locate and provide the information requested in an efficient manner.** As an example, the United Kingdom's Information Commissioner's Office (ICO), which provides a complete and simple-worded guidance on how to request information from public bodies in the UK, states that one does not need to say why he or she wants the information, but does mention that explaining the purpose behind one's request could assist the authority in identifying the information (ICO 2015a)[119]. This **voluntary approach would be more constructive as it could also help members of the public understand why they might wish to explain their reasons for requesting information, instead**

[119] The Information Commissioner's Office (ICO) was set up to uphold information rights. On its website, it claims to be "UK's independent authority set up to uphold information rights in the public interest, promoting openness by public bodies and data privacy for individuals" (ICO 2015a). The guidance provided by the ICO on how to access information from a public body can be accessed through the following link: <https://ico.org.uk/for-the-public/official-information/> [Accessed 10 November 2015].

of forcing them to do so and threatening to charge them if the information is used contrary to the stated purpose, especially if it leads to "detrimental effects".

Indeed, the author opines that obliging applicants to explain their reason and purpose for requesting information would border on applying authoritative-like control on the public's use of the information[120]. While it might not be exercised in a way that was described under the author's examples, the law would remain in place regardless of who comes into power. Hence, if a State Government with authoritative tendencies were to take over, it could use such provisions under the information law to filter out those who may potentially expose any Government deficits or malpractice and punish them, as long as they appear to contradict their declared reason and purpose for requesting Government-held information. Therefore, keeping such a provision in a law that is meant to grant the public "freedom" to access information may result in it being used instead to curb the public's expression of their knowledge on an issue of concern, such as environmental harm, human rights abuse or corruption. Taking action against people who use information provided to them to question or comment on Government activities, could arguably lead to the formation of fear and distrust towards authorities, which might deter constructive dialogue,

[120] As discussed in Chapter 3, this would be an example of "passive" information. The State Government should also engage in providing information to the public as actively as possible (i.e. "active" information). In the context of the environment, active dissemination of information could be helpful in keeping the public aware of any environmental-related issues linked to the State Government's activities and development plans. This could serve to bring the public's attention to matters that may affect their environment so that they are kept well-informed, and could also encourage the public to participate in providing feedback on any potential impacts (to the people and/or the environment) that might have been overlooked by the authorities. In this sense, the public and the Government could seek solutions to such matters together, as partners.

innovative suggestions as well as progressive collaborations for improving policies between Government and citizens.

The author hence considers that although Selangor's Freedom of Information Enactment has potential to nurture transparency and accountability in the State Government through making information more available to the public, some aspects of the law could be subject to abuse by authorities if left as is and not revised. As the author explained, the provisions that are currently present in the law could function as a way of keeping the public silenced on issues that may actually be, ironically, *detrimental* to the development of the State and nation in the long run. In this regard, the law, which seemingly advocates Government transparency, accords an amount of protection and invincibility to authorities by allowing them to avoid being held accountable, as well as to identify and punish whistleblowers.

Since the interpretation and application of such vague terms under the Enactment have yet to be challenged, the author is unsure, at the time of writing (September 2015) of how the current Selangor State Government would react if the examples of such scenarios described above were to ever take place. After all, the law was just introduced in 2011, and there are currently no guidelines on its implementation that would be available for reference[121]. Therefore, such cases would remain to be experienced by State authorities and witnessed by the public. Either way, the discussion above has identified a few of the weaknesses of Selangor's information law, which the State would need to continue revising if it

[121] The author is not aware of whether the State authorities intend to produce any guidelines for implementation of the Enactment at this moment or in the future.

truly holds intentions of maintaining the real spirit of such a law - that is to keep the public informed of Government decisions and actions by making information available and accessible to them.

While the focus of this research has limited the author to examining access to environmental information at Federal level, it is worthwhile to note that some of the challenges being experienced by State Governments such as Selangor in implementing their “Freedom of Information” (FOI) laws could help provide valuable insights on the sort of hurdles that would need to be confronted and overcome if such a law were to be introduced at national level. The author expects that implementing an access to information law would involve organising and managing a greater amount of information, some of which would need to be separated and protected for purposes of national security or foreign diplomacy, and may likely incur higher costs as well. Nevertheless, having an “FOI Act” (or perhaps a “Right to Environmental Information Act”?) at Federal level could provide a standardized template for all States in Malaysia to implement, and may be improved as the country continues to learn lessons from its experiences of implementing such a law.

Abu Bakar Munir & Siti Hajar Mohd Yasin (2009) observe that there have been unending pleas for FOI laws in Malaysia: “suffice it to say at this stage that the government has been, especially of late, lambasted with criticisms of its secretive and prescriptive manner of government (p. 34). However, at this moment, the Federal Government does not appear to be ready to introduce an FOI Act at national level. YB Datuk Paul Low, who is a Senator and Minister in the Prime Minister’s Office, was recently reported to have explained that while it

would be ideal to have an FOI law in the country, a certain structure would need to be in place for such a law to be implemented. His reported statements allude to deficits in the current system of information in Malaysia: "'The system itself...you don't even know which officer can help you, and the officer inside, he doesn't even know where he can access the data…To (set up) FOI, you may need 300 people to deal with so much information, so it's not an Act alone. You need information officers. At the moment, that's not feasible'" (Lee 2015). Low also implied that the Malaysian society would still need to learn how to use information responsibly. He was reported to have said that if data were to be released: "'(It should be used) in a way that is constructive...don't simply condemn'" (Lee 2015). His statements stirred Selangor Speaker, Hannah Yeoh to respond by arguing that Selangor and Penang have "shown the way to freedom of information", that "training did not cost the government much", and that it would take "political will to enact the FOI legislation. Without it, you will get precisely what Low is talking about – excuses" (Malay Mail Online 2015b; Murty 2015).

It would thus seem that although there have been demands for Government to enact information laws, there remains an amount of hesitance displayed in releasing information to the public due to concerns of it being misused. As the author's analysis of the Enactment enforced in Selangor displays, even when information laws are implemented, the use of the information obtained may still be strictly monitored to prevent abuse of the freedom afforded. While there are no laws at Federal level that expressly provide citizens with access to information, environmental or otherwise, there are still aspects of a few Federal

laws in Malaysia that might be helpful in giving the public some amount of access to environmental information. The main laws are explored and discussed below.

5.2.1.2 *Environmental Quality Act 1974 (EQA)*

(enforced by the Department of Environment)

Despite the lack of legal obligations placed on authorities to provide access to environmental information in the Federal Constitution, the author discovered that upon further inspection of the EQA 1974, under Section(3)(1)(*l*)[122], part of the Director-General of Environmental Quality's duty is **"to provide information and education to the public regarding the protection and enhancement of the environment"** (Laws of Malaysia 1974). This raises a question as to the extent or scope in which this part of the law would apply. The author has not managed to trace any critical analysis or interpretation of this specific provision in literature thus far, hence the author was unable to refer to other experts' opinions or compare her assumption of this part of the law to those of others.

When closely examined, the Section appears to oblige the "Director-General of Environmental Quality" to perform the duties of **1)** Providing information to the public regarding protection and enhancement of the environment, and **2)** Educating the public regarding protection and enhancement of the environment. On the other hand, it may also be implying that providing information and education go hand-in-hand as information would be expected to lead to increased education on the environment. The author also notes the

[122] Section 3(1) of the EQA 1974 states: "There shall be a Director General of Environmental Quality who shall be appointed by the Minister from amongst members of the public service and whose powers, duties and functions shall be –" (Laws of Malaysia 1974).

Section's specific wording, that is "*…regarding the protection and enhancement of the environment*" – Does this imply to simply provide information regarding the Department of Environment's (DOE) work of protecting and enhancing the environment, or does it also include the act of teaching (and thereby "educating") the public on **how to** protect and enhance the environment?

Due to the author's lack of legal expertise and knowledge behind the interpretation of this particular provision, attempts were made to obtain clarification from the DOE's legal unit. An initial response through e-mail was received stating that the information would be provided to the author when it is ready. However, the information was not provided, even after several follow-up e-mails were sent to the contact person. With no clear confirmation on the actual function of this provision in practice, one may assume that the DOE fulfills the duties of this legal order through the publishing of its environmental quality reports and annual reports, which contain information on the programmes that the DOE has implemented to raise awareness on environmental protection in Malaysia. Nonetheless, it would have been much more helpful to obtain clarification on this provision from DOE authorities that hold the responsibility of interpreting and enforcing the main environmental framework law of the country, so as to gain a better understanding on how such mandated duties are being fulfilled as well as to identify the challenges that the DOE may experience in its efforts to perform the tasks that it is legally obligated to do. Indeed, the author's experience is an example of some of the barriers that the public may face in effectively obtaining environmental information from authorities. This also

provided a good practical insight into the shortcomings of trying to obtain environmental information in Malaysia as a member of the public.

5.2.1.3 *Town and Country Planning Act 1976 (TCPA)*

(enforced by the Federal Department of Town and Country Planning)

Town and country planning would most likely lead to making strategic changes to the environment for development purposes. Although the Department is separate from the DOE and is not tasked to specifically handle "environmental issues" per se, the activities that fall under its purview could leave significant impacts on the state of the environment, and thereby the people who inhabit it. Under Part II, Section 2B(1)(*c*) of the Town and Country Planning Act 1976 (Act 172)[123], one of the listed functions of the Director General of Town and Country Planning is "to provide information and education to the public regarding town and country planning". The Director General also has the responsibility to "publish reports, bulletins, statistics, monographs and other publications relating to town and country planning and its methodology" (Laws of Malaysia 1976, Part II, 2B. (1)(*b*)).

The Act does not provide a precise definition of the terms "information" and "education" in the context of town and country planning or generally, but the author's examination of the provisions of this Act (such as Sections 9 and 13) reveals that they may appear in the form of "publicity" through local newspapers that serve to inform the public on the availability of a draft plan for inspection,

[123] This Act can be viewed through the following link:
<http://www.agc.gov.my/Akta/Vol.%204/Act%20172.pdf> [Accessed 7 October 2015].

including its location and the time frame for objection. Nevertheless, the fact that a general provision, which places emphasis on informing and educating the public on development plans that could affect their environment, exists in such an Act arguably implies that the law has placed some amount of responsibility on the Government to provide information, and to anticipate the public's response towards the information given to them[124]. Indeed, the opportunity to participate is provided in the Act, whereby it specifies the methods in which a State Director (of the Town and Country Planning Department of that State) should prepare and publish a notice to the public to inform them of the availability of copies of a draft structure plan for inspection.

Access to information is provided under provisions of the Act that covers preparation of draft structure plan[125], which includes Sections 9 (1, 2, and 3), 10 (7), and 11B(3). For draft local plans[126], it can be found under Section 12A(a), and Section 13(2 and 3), which orders that publicity needs to be given before commencing preparation of a local plan to inform that it will be prepared. Some provisions in the Act, such as Section 12(4), although not specifically aimed at giving public access to information, appears to push for preparation of clear and robust information by mentioning the use of "diagrams, illustrations and descriptive matter as the local planning authority thinks appropriate for the purpose of explaining or illustrating the proposals in the plan…" (Laws of Malaysia 1976, p. 31). This may be useful for the public as well when the plan is shared for public review.

[124] The aspect of public participation present under this Act will be further discussed in Part 2 of this chapter.
[125] Refer to Section 8(3) for an explanation of what this written statement consists of.
[126] Refer to Section 12(3) for how this should be prepared.

In some ways, the TCPA 1976 appears to be one step ahead of the EIA process, which does not appear carry out this scoping exercise to inform people of an upcoming industry that is planning to set up in the country. The TCPA 1976 mentions “sustainable development” (8.3a) “environmental protection of the State and the nation” (8.4a), “improvement of the physical environment” (12.3a.iii), “improvement of landscape” (12.3a.v), “preservation and planting of trees” (12.3a.vi), and “management of traffic” (12.3a.x). In fact, Section 7(1) provides the State Director with the task of instituting a survey of the State, by “examining the matters that may be expected to affect the development, or the planning of the development, of the State, and shall in any event keep all those matters under review”, which includes environmental characteristics of the State as well as the environmental management and conservation policies of the nation (Section 7(3)(a and aa)). In addition, the Act gives the local planning authority the power to “grant planning permission either absolutely or subject to such conditions as it thinks fit to impose, or refuse to grant planning permission” (Section 22(3)). The “conditions” that may be imposed could be applied if necessary to prohibit damage to the land’s physical environment, removal or alteration of natural features of the land, felling of trees, and for securing the planting or replanting of trees in a particular area (Section (22(5)(d, e, f, and g)). It also places a duty on local planning authorities to ensure that a tree preservation order is complied with where planning permission is granted (Section 22(5A)). Hence, as examined by the author, this Act very much acknowledges the importance of managing environmental matters and expressly commands responsibility of authorities over matters that directly pertain to the

livelihood of the environment, including providing some amount of information to keep people informed.

5.2.2 *In Federal Ministries, Departments, and other Government bodies*

Through the author's limited experience in requesting environmental-related information directly from authorities (such as a report of Malaysia's National Communication to the UNFCCC), the responses from relevant Government departments were usually provided within 24 hours. However, during the course of this research, it was noted that on several occasions, an initial **reply** that was given to the author within 24 hours did **not** necessarily translate into **providing the information** requested. The author would at times receive an e-mail reply or be told in person (during seemingly enthusiastic face-to-face meetings or encounters) that the information would surely be provided. However, such promises were often left unfulfilled as the author's attempts to follow-up and reach the contact person was met with silence and avoidance. Not surprisingly, others have similarly commented on some of the difficulties that exist in obtaining information from the Government (Interview with NGO representative, 13 March 2014).

In the case where information was provided, the author observed that there were degrees of access allowed, according to the type of information and the "sensitivity" of the information as well. The author had indeed expected some information to be unavailable to the public due to legal or national security reasons, but it was interesting to find information made available albeit under

strict monitoring. Hence in requesting environmental information, it was found that some Government authorities allowed the author full access to the requested information (such as through providing a copy of a report or document), some offered only limited access (such as allowing the author to only read the report or document on location without borrowing or making copies), while others provided no access at all (to which the request was politely declined, often with reasons of unavailability or inability to release the report or document).

In reflecting such degrees of access, the author created a special term – "**shadows of access**" as an attempt to broadly describe the layers (i.e. "shadows") of access that are seemingly applied over certain information, so that they may be accessible to a certain extent, but not entirely. The author's creation of this term and adoption of the word "shadows" were inspired by the use of the word "sunshine" in "sunshine laws". Therefore, while "sunshine" may be shone on some Government-held information (i.e. no shadows, therefore it is fully accessible for public viewing and use), varying layers of "shadows" can be applied over other types of information, so that they may still be somewhat accessible, but be made more difficult for the public to obtain (i.e. they may require online registration, or an official letter of request to be sent by mail, or approval from a departmental director).

The enforcement of specific laws in Malaysia might be one of the reasons why there appears to be significant limitation to the amount of access and type of information that Government officers are allowed to release to the public[127]. Arguably, this may be due in part to the Government's role in maintaining peace, harmony and overall stability among the diverse groups that form the Malaysian society[128]. It could also be an indication of reluctance or hesitance in sharing information with the general public, as was witnessed in Datuk Paul Low's previous statement where he expressed some concern over misuse of information by members of Malaysian society.

Nevertheless, efforts to keep the public informed regarding the environment seems to be showing some progress, especially with the help of non-governmental organisations (NGOs) as well as the increasing use and convenience of the Internet. The author discovered some channels for access to environmental information that are currently being provided to the Malaysian public by various Federal Ministries, Departments, and other Government bodies.

Below, the author identifies and discusses several open sources of environmental information that are provided for public reference, and offers a

[127] These laws will be identified and discussed later on in the chapter.

[128] According to the Centre for Public Policy Studies (CPPS) of Malaysia's Asian Strategy and Leadership Institute, "The Malaysian government has repeatedly rebuffed requests for FOI legislation from opposition Parliamentarians, civil society representatives and journalists' groupings. Its chief argument is that access to information could 'affect race relations' within the multi-ethnic population" (CPPS 2008). Although this research does not intend to investigate the debates and discussions surrounding Malaysia's history of race relations, which has arguably influenced the development of politics and policy-making in the country, it is certainly an aspect of Malaysia that cannot be ignored, and must be acknowledged when one explores the reasons behind the limited access to information that exists in such a country. Indeed, Malaysia's societal composition has often led its leaders to perform a constant balancing act in ensuring that the concerns of each racial group are addressed, while preventing any spread of malicious hate messages or racist remarks that could likely incite violence or riots. It can be argued that this unique cultural characteristic of Malaysia makes the country one that has become especially careful in allowing open and unlimited freedom of speech, expression and information.

brief analysis of the main obstacles that the author had encountered while examining and testing out these sources of information.

5.2.2.1. *The Enviro Knowledge Management Centre*

This is an online portal that was launched in March 2014 by Malaysia's Department of Environment (DOE), which is overseen by the Ministry of Natural Resources and Environment (NRE), as a way of providing the public with a convenient method of obtaining environmental-related information held by the DOE (DOE 2014; Interview with senior DOE officer, 16 Jan 2014). Through the availability of such information online, the public may now be able to easily access reports, statistical data, journal articles and several other sources of information available through the portal. A basic user registration is required to open the digital documents. The author took less than five minutes to register as the form did not request too much detailed information[129], and was able to easily navigate and search through the list of available items. Thus it would seem that everyone could easily register and gain access to the public documents available, which are not only readable online but also downloadable. The portal is managed by the DOE's Strategic Communications Unit, specifically as part of the

[129] The registration process requires users to enter full name, e-mail, chosen password, country, state and topic of interest, which were only limited to two options: environmental care and environmental report. While the author would argue that the public should not need to register to obtain information that has already been made publicly available (such as newspaper cut-outs), the author believes that in this case, the registration of user information may be carried out to merely keep track of how many visitors are actually using the web service, and to know what they are using it for (i.e. for feedback and statistical purposes). In fact, searching for anything on the portal can be carried out without registering, but to view and download an item, users would have to register. Hence, in this regard, the author does not view the user registration as a form of Government monitoring over public "freedom" to access the information that has been compiled and uploaded online specifically for public use.

DOE's central library located in its headquarters in Putrajaya[130]. The next page displays screenshot images that the author captured of the Enviro Knowledge Management Centre online, in order to show how the portal is designed and some of the features it contains (see Figure 15 and 16).



Figure 15: A screenshot displaying the DOE's homepage for the Enviro Knowledge Management Centre (DOE 2014)

[130] The DOE library is a small library located on one of the floors of the DOE's main headquarters' office building. It is open to the public and houses books related to the environment, and official reports, booklets as well as pamphlets published by the DOE. It also serves as one of the locations for members of the public to gain access to EIA reports, especially those that are made available as part of a Detailed EIA requirement. Each State DOE office has its own library, hence more localised information can be found in the State libraries. Librarians who the author talked to also mentioned that the state libraries are more active as more students frequent it as opposed to the library located in headquarters.

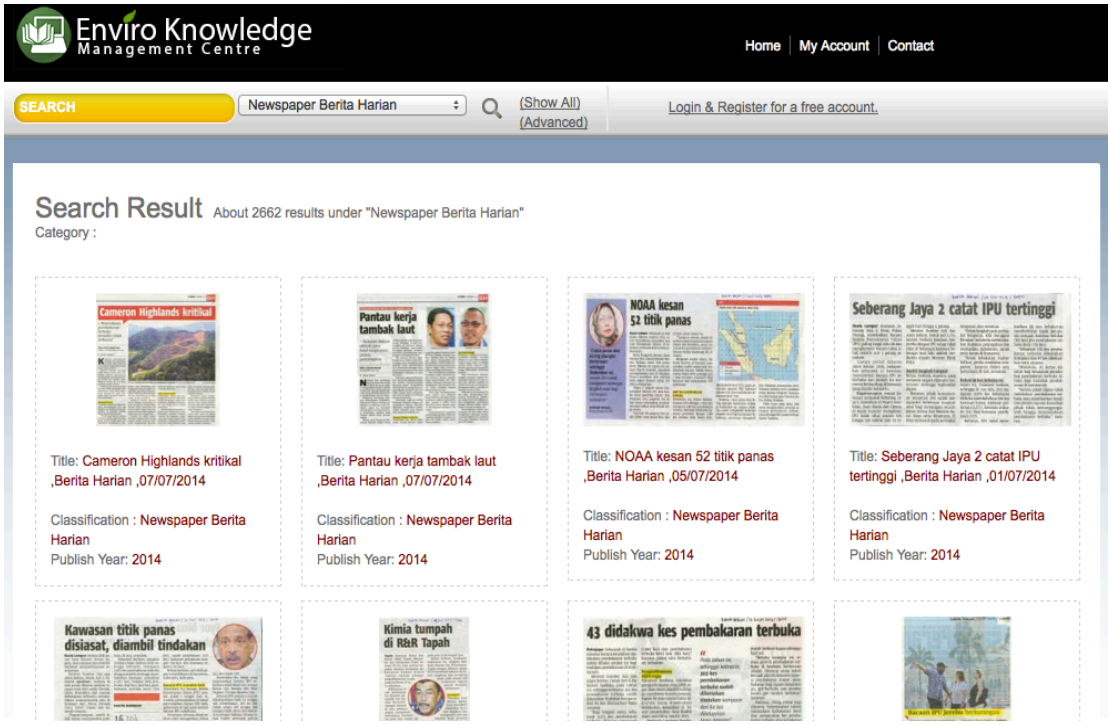


Figure 16: Screenshot of search results from the DOE's online library or Enviro Knowledge Management Centre. The portal holds a compilation of environmental-related newspaper cuttings from local newspapers, which registered users may freely download (DOE 2014)

Obstacles

There is still much to be improved in terms of search keywords and missing documents. At the time when the portal was just launched, the author was present in Malaysia and was informed by DOE officers of the challenge they were experiencing in transferring all printed materials into digital formats, which is a process that is expected to take some time to complete. Understandably, it is a tedious process that also involves close collaboration and mutual understanding between DOE officers-in-charge and ICT experts involved in the project. Additionally, the requirement for users to register before being able to download

any materials may also limit the ability for people to quickly and freely access the public information made available through the portal.

5.2.2.2. *The DOE Environmental Quality Report (EQR)*

This annual report publishes the latest recorded state of the environment in Malaysia, according to the station checks and inspections carried out by the DOE. The DOE is required to prepare and publish the report annually under Section 3(1)(*i*) of the Environmental Quality Act 1974. The report is useful in tracking important trends occurring in the natural environment such as levels of pollution present in air quality and river water quality. The EQR is made available in print and online, and can be freely downloaded.

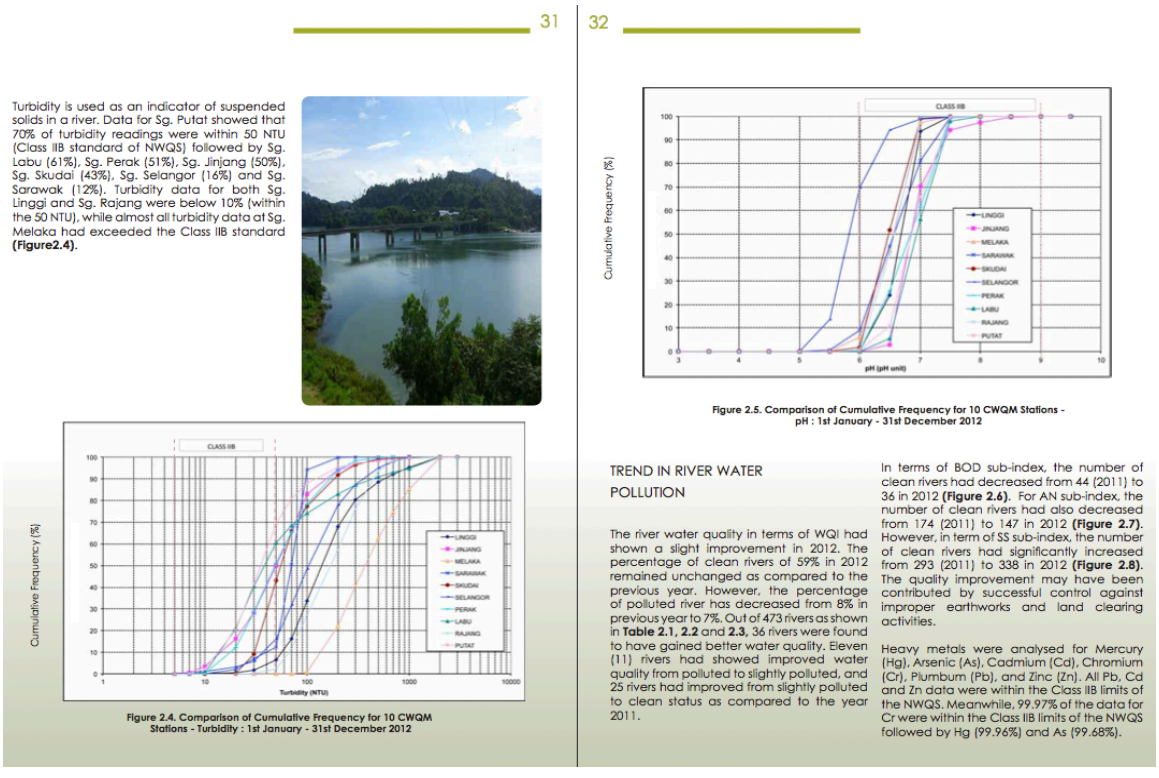


Figure 17: A screenshot displaying pages from the 2012 EQR providing data on river water quality in Malaysia (DOE 2012e, p. 31-32)

Obstacles

The report is technical and statistical in nature and thus provides scientific data with a very brief summary of the information. It serves its purpose of reporting environmental information, but does not explain what such information signifies in terms of societal impact. The report is useful to scientists, academics or anyone who possesses the skills and knowledge to utilise and interpret the technical information. However, it would likely be difficult for a layperson to comprehend the findings of the report. Then again, such a report was perhaps not prepared with laypersons' understanding in mind, and may point to the gap that exists in the dissemination and communication of environmental information to the general public. If environmental information is only reported through numbers and statistics by the Government, this means that opportunities exist for NGOs, corporations or think-tanks to provide services in translating the information in a way that could provide a more "human" analysis of the state of the environment, so that laypersons could better understand how their environment is changing, and how important it is to protect it. Barriers to having such services, however, may include the interpretation of the data or people charging fees to provide "translated" information.

5.2.2.3. ***The DOE Annual Report***

This report provides a summary of the plans, programmes and progress of the DOE throughout its yearly activities. Each year, the report's structure is organised under the same themes or areas of concern, one of which includes raising awareness and education on environmental issues. This is useful, as people can know where to look for the information each time, in a consistent manner. In the report, the Director General of the DOE emphasises that enforcement is the "core business of the Department" (DOE 2012a, p.8). Hence, the report places more focus on its management of enforcement activities and progress such as in conducting EIA investigations, complying with legal environmental requirements, running the River Quality Monitoring programme and enforcement against open burning activities. The contents of this report appear to supplement the data from the EQR by providing an explanation of the programmes that have been implemented by the DOE, the meetings that were conducted, the laws that have been amended or newly gazetted, the rivers that were monitored, the EIA reports that were submitted, and the Department's various other responses to addressing an array of environmental issues that need to be managed in the country. The public's use of this report may be through keeping informed of what the DOE has done in carrying out its duties, and to keep track on whether certain environmental issues of concern have been or are being addressed or not. This report is available in print and online.



Figure 18: Screenshot from a DOE Annual Report (DOE 2011, p. 50), displaying public awareness activities of the DOE.

Obstacles

The report is focused on providing a summary of the DOE's programmes, activities, and achievements, but does not appear to provide further explanation as to how effective the programmes are or have been towards the DOE's efforts in protecting the environment. For example, the table in Figure 18 that displays public awareness activities does not provide information or brief summary on the outcomes of those activities and the feedback (if any) from the participants. While the report can be helpful for quick reference and to obtain an overall bird's-eye view of the DOE's activities, perhaps it could include footnotes or links that can lead readers to gain more detailed information on any particular programme or activity, such as through webpage, report, or meeting minutes (if available for the public to access).

5.2.2.4. *The Department of Environment Web Portal*

This is the DOE's official website and main source of information. It contains useful information regarding the Department's areas of responsibility and links visitors to the DOE's various portals that handle specific issues related to environmental matters. The website has improved from past years. It is now more easily accessible and appears in search results of online search engines[131].

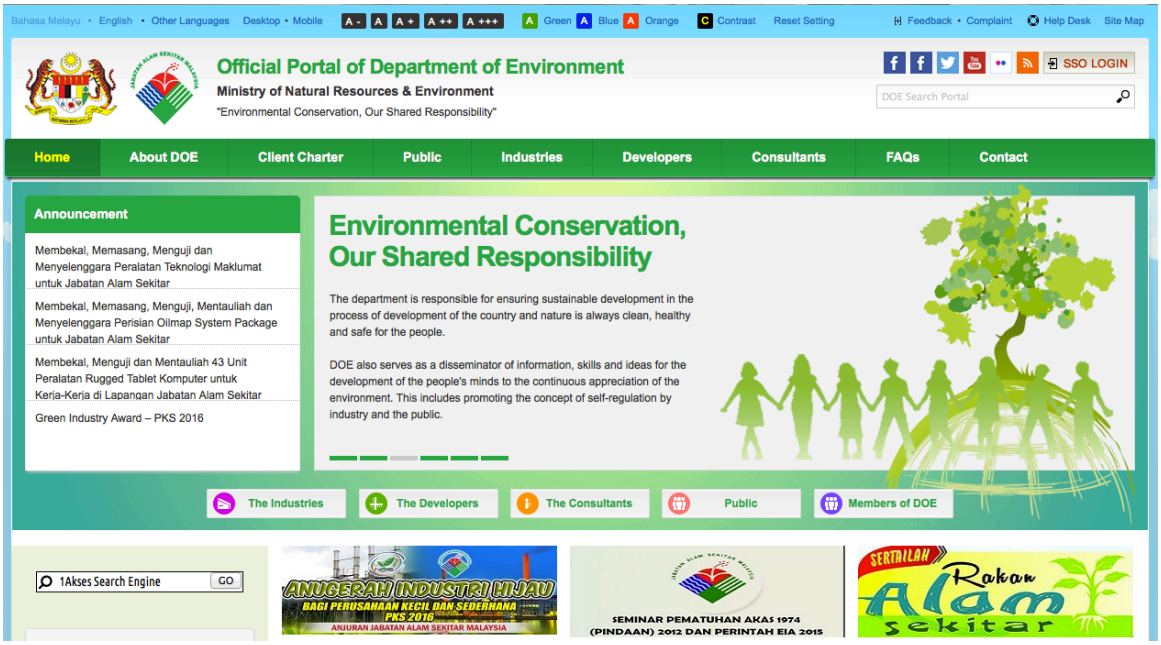


Figure 19: Screenshot of the home page (top part) of the DOE's website (DOE 2016b)

[131] This website previously encountered issues with accessibility because online search results of DOE Malaysia would bring up the country's air pollutant index (API) instead (Author's observation in 2012).

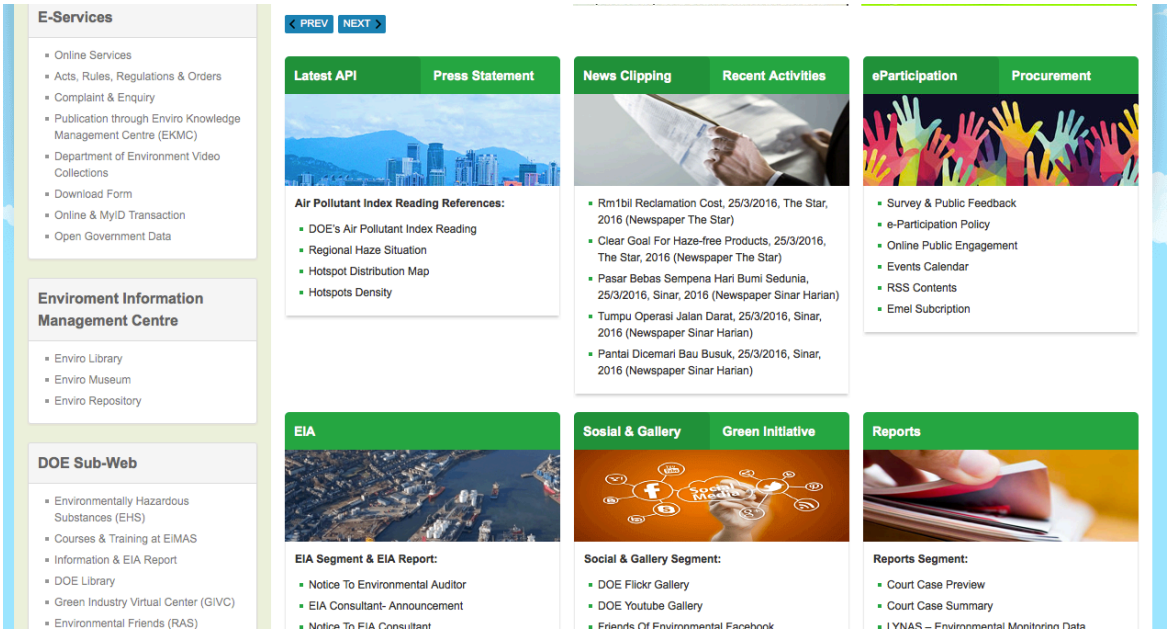


Figure 20: Screenshot of the home page (lower part) of the DOE's website (DOE 2016b)

Obstacles

The DOE website had changed when the author visited it in 2014 in terms of its design, but at the time of writing (February 2016), the author finds that the website still appears to be wordy, which can make it difficult for visitors to easily and efficiently look for the information they need. That said, its visual design appears to have improved from before (e.g. matching colors, clear drop-down menus, more space between words and sections), but the amount of words that has been fitted onto the homepage (which is the first page a visitor sees upon arriving to the website) can be overwhelming and very confusing to find what one is looking for. For example, there is an unnecessary repetition of the menu's buttons made available above the DOE's announcement box (or section) and another below it. Additionally, the author discovered that not all information provided has been updated to the latest version. An example of this was when

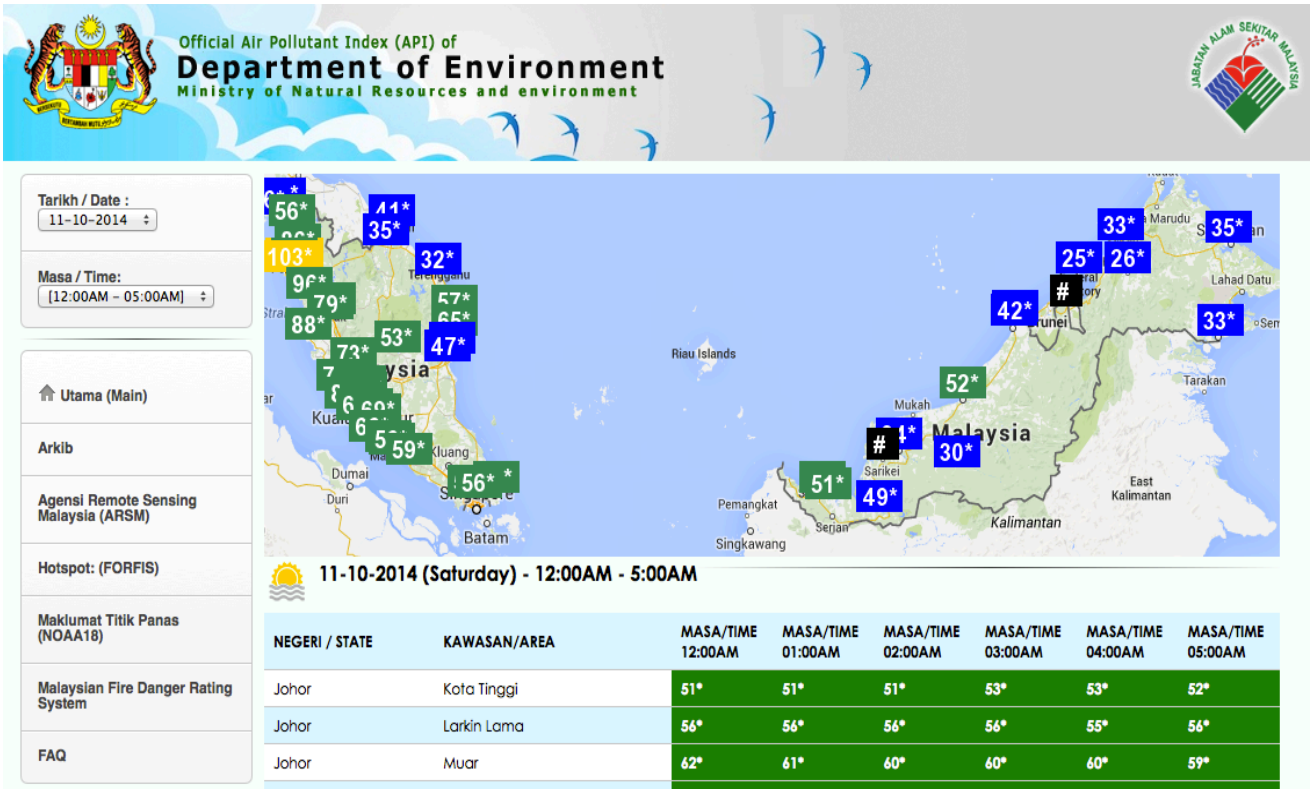
the author searched for the latest version of the EIA Handbook, which has been updated since the revised version was published in 2007 – the latest updated version in its complete form should have been provided digitally online for download. Currently, the document containing the EIA procedure and requirements in Malaysia offered online remains out of date, which means that it is possible for new project proponents (or opponents) to miss some essential information. They should be made aware of the latest updates before preparing their EIA reports, such as whether or not their business activity is categorised under the updated list of activities requiring Detailed EIA, or the fact that a new EIA Order has been introduced and sets out different requirements[132].

5.2.2.5 *Air Pollutant Index (API)*

After years of experiencing severe cases of haze that were primarily caused by transboundary air pollution and open burning[133], the Malaysian public placed pressure on the Government to provide information on the status of their air quality (Article 19 Organisation & CIJ 2007). The API was finally made available to the public in 2005, after much debate and controversy between the Government and citizens (Article 19 Organisation & CIJ 2007). From the author's investigation, the API is currently displayed online, where the public can freely access it to check on the latest condition of the air that surrounds them, according to states and cities in Malaysia. The index provides live updates with a

[132] This will be discussed further in Part 2 of this chapter.
[133] See, for example, "Haze from Indonesian fires causes pollution spike in Malaysia" (ABC News 2015) and also *Review of air pollution and health impacts in Malaysia* (Afroz et al. 2003).

one-hour delay[134]. The visual presentation of the API has been greatly improved in recent years (see differences in Figure 21 and Figure 22).



NEGERI / STATE	KAWASAN/AREA	MASA/TIME 12:00AM	MASA/TIME 01:00AM	MASA/TIME 02:00AM	MASA/TIME 03:00AM	MASA/TIME 04:00AM	MASA/TIME 05:00AM
Johor	Kota Tinggi	51*	51*	51*	53*	53*	52*
Johor	Larkin Lama	56*	56*	56*	56*	55*	56*
Johor	Muar	62*	61*	60*	60*	60*	59*

Figure 21: Screenshot of the DOE's API taken in October 2014. The author had already considered this format and layout as an improvement from the API that was made available in previous years. However, further improvements have been made since this screenshot was taken.

[134] As the API webpage explains, a reading that is displayed online at 8am is that of the air quality at 7am, due to the time that it takes for the information to be remotely recorded, collected, and delivered online (DOE 2016a).

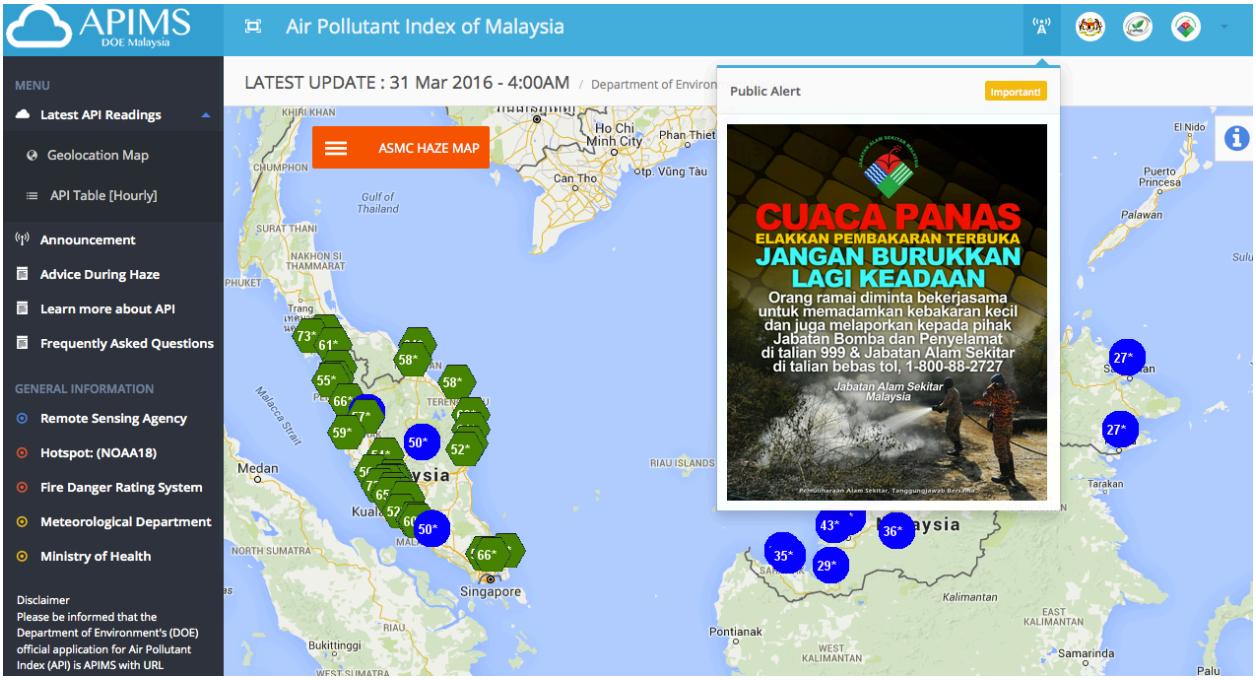


Figure 22: Screenshot of the API taken in March 2016. The map's borders have been expanded so it appears bigger, thus visually easier to navigate, and the design appears professional and attractive, due to the colors, simple cloud logo, and white font against a dark background in the left-hand side menu. When the author visited the webpage, there was a public alert that popped up for a few seconds[135]. This is a new feature that was not previously seen.

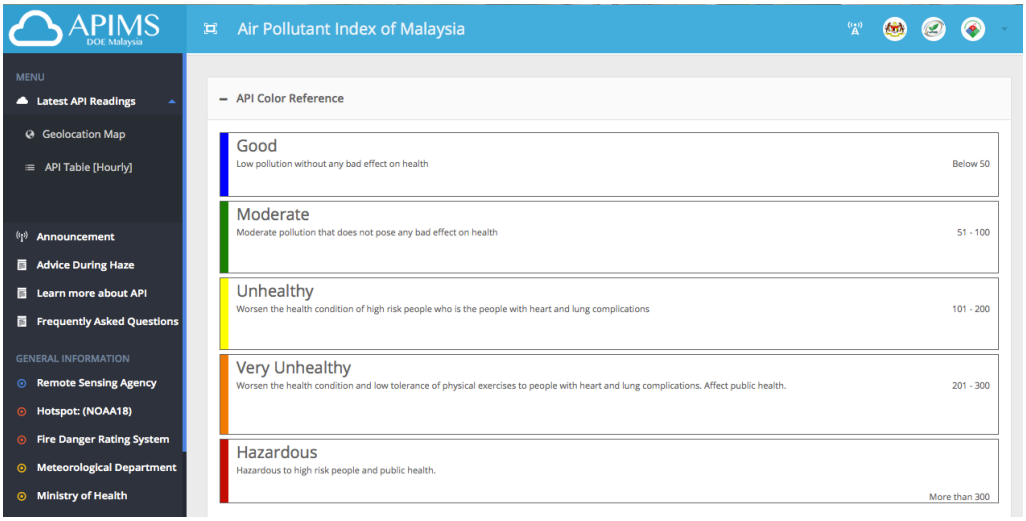


Figure 23: This screenshot displays the API Color Reference. These colors are assigned to indicate the different levels of air pollution. The colors also appear in the map as different shapes such as circle for blue, pentagon for yellow and triangle for red.

[135] The pop-up message reads: "HOT WEATHER, AVOID OPEN-BURNING, DO NOT MAKE THE SITUATION WORSE: The public is requested to cooperate by putting out small fires and to also make a report to the Fire and Rescue Department by calling 999 and the Department of Environment by calling the toll-free line 1800-88-2727".

Obstacles

Haze has been a reoccurring environmental issue experienced not only by Malaysia, but its neighboring countries as well. In 2015, the issue of haze, which reportedly reached dangerous levels (the worst it's been in 20 years) through September and October was raised yet again, and has been referred to as a "crime against humanity" (McKirdy 2015; BBC 2015c)[136]. The devastating air pollution caused by illegal agriculture fires in Indonesia led to uncontrollable forest fires and has deeply affected the lives of Malaysians (Ibid). The API, therefore, has become an important tool for the public to refer to at the time of writing (October 2015). However, there has been speculation that the information displayed on the API has been tampered with and manipulated (Kaur 2015). It is possible for the online system to sometimes fail or encounter a technical error, but some have also questioned whether accurate information has been purposely withheld from the public. The DOE has denied allegations of information manipulation, explaining that Malaysia uses five parameters to record air quality (Kaur 2015).

While there is no clear evidence that the Government is currently withholding such information from the public, there may be reasons why people believe that authorities are not being completely transparent. It can be argued that public information on deteriorating air quality may cause social unrest as people would demand and pressure the authorities to solve the problem. It might also tarnish the country's reputation by negatively affecting tourism and foreign investments, which was one of the arguments put forward by authorities in the

[136] Ref

past, when the API was reportedly considered a state secret (thus protected under the Official Secrets Act) during the haze crisis of 1997/8 until the haze crisis of August 2005[137] (Article 19 & CIJ 2007, p. 38-39; BBC News 1999).

5.2.2.6. ***Compendium of Environment Statistics***

This is a book[138] published annually by the Malaysian Department of Statistics that contains statistics on the Malaysian environment, impacts of human activities on the environment and actions taken to minimise the impact, with specific focus placed on four main environmental issues – Air/Atmosphere, Water/Aquatic Environment (Inland and Marine), Land/Terrestrial Environment and Urban Environment/Human Settlements (Department of Statistics Malaysia 2013, p. ii). According to the Chief Statistician's preface message, "This publication is an effort towards the development of a database for environmental statistics in tandem with the Department's role as a central repository for environment statistics" (Ibid). The information gathered in the compendium was obtained from the DOE, Members of the Inter-Agency Committee on Environment Statistics (IACES), other Ministries, departments and government agencies (Ibid, p. xlii). The compendium provides a comprehensive amount of statistical data related to the environment and in some chapters, it offers a brief explanation of how some factors are connected to environmental degradation

[137] According to an article published on 6 August 1999 by BBC News, "the [Malaysian] government said it would not start publishing the index again because it might scare away tourists". Refer to <http://news.bbc.co.uk/1/hi/world/asia-pacific/413864.stm> [Accessed 21 Jan 2016].

[138] It is also available in digital form, which can be accessed through the following link: <http://www.statistics.gov.my/portal/download_Environment/files/Compendium_2013/Compendium_Of_Environment_Statistics_Malaysia_2013.pdf> [Accessed 2 Nov 2014].

and what the Government is doing to address these issues[139]. The author considers this a positive development for access to information, as it could be useful in providing statistical information to the public regarding the environment in one convenient source of reference. According to the Malaysian Department of Statistics, the data provided in the Compendium is compiled based on the United Nations Framework for The Development of Environment Statistics (FDES) 1984 and modified according to Malaysia's situation (Department of Statistics Malaysia 2015).

Obstacles

Being a compendium of statistics that functions to present information derived mostly from other sources, the author did not detect any significant obstacles. The language that was translated from Malay to English could be further improved, but overall the information was written and presented in a way that could be easily understood by lay people, which, in the author's opinion, would make it a beneficial source of scientifically-based information on the environment for the public to refer to. That said, the Government programmes that were described in some of the chapters were listed down and briefly explained, but did not include statistical data on expenditures spent in the programme or the number of organisations and individuals who participated in a

[139] The compendium does not only provide pages of lists, tables and figures, but accompanies them with an explanation of the causes behind some of the environmental problems faced in the country as well as the Government programmes that are being implemented to resolve them. An example of this can be seen in pg. 61 on Agriculture and pg. 47 on Coastal Zone Management Activities (Department of Statistics Malaysia 2013).

particular activity[140]. This may be due to the fact that such data was not provided to the Department of Statistics by the authority holding the information.

5.2.2.7. *Online Notification and Registration of Environmentally Hazardous Substances (EHSNR)*

According to the DOE, the EHSNR was set up on a voluntary basis (DOE 2011). An Environmentally Hazardous Substance (EHS), is defined by the DOE as "a substance that is included in the EHS Reference List, or if not on the list, must be assigned a hazard category under the GHS classification scheme, as implemented by the Department of Occupational Safety and Health Malaysia" (DOE 2012c). The EHSNR was introduced to provide "the necessary information to the Malaysian Government that will enable the Department of Environment and other agencies involved in chemicals management to identify substances of concern in the country and make decisions about how to manage these substances in a safe and sound manner" (DOE 2012b)[141]. Examples of these hazardous substances that DOE provides include petrol, pesticides, fertlisers, liquid petroleum gas and may also be others (Ibid).

The objective of the Malaysian Environmentally Hazardous Notification and Registration Scheme is "to collect information from industry about the hazardous substances that are on the Malaysian market by introducing a notification requirement for such substances manufactured in or imported to Malaysia" (DOE

[140] Refer to p. 37 of the Compendium on "Love Our River Campaign" (Ibid).
[141] More information on the purpose, scope, and implementation of the EHSNR can be referred to through the following link: <https://www.e-ehs.doe.gov.my/app/webroot/portal/about-ehs-n-r/> [Accessed 20 June 2015].

2012b). According to the DOE, the information submitted by industry will then enable the Department to establish the Malaysian Chemicals Register, which will contain information about the identity of substances that have been notified to DOE, their uses in Malaysia, their hazard classification and the accumulated amounts placed on the market in Malaysia. The information provided by the Chemicals Register will be made available to the public online.

However, the DOE explains that "[a]ccumulated amounts manufactured or imported will only be publicised for substances notified by three or more manufacturers or importers" and that "[a] particular use of a substance will likewise only be publicised if notified by three or more manufacturers or importers" (DOE 2012b). The introduction of the NREHS is by far the only type of registry introduced by the Government of Malaysia that closely resembles the Pollutant Release and Transfer Register (PRTR)[142] of the Kiev Protocol (that is linked to the Aarhus Convention and implemented in Europe), and can be considered as an example of how a country could adopt its own tailor-made registry without having to become a signatory of any convention or be tied to a binding agreement. It may be more helpful for a country like Malaysia to then formulate environmental laws, regulations and policies through the knowledge gained from its own experiences and capacities.

[142] For more information on the European Pollutant Release and Transfer Register (E-PRTR), please refer to the following website: <http://ec.europa.eu/environment/industry/stationary/eper/legislation.htm> [Access 18 April 2015].

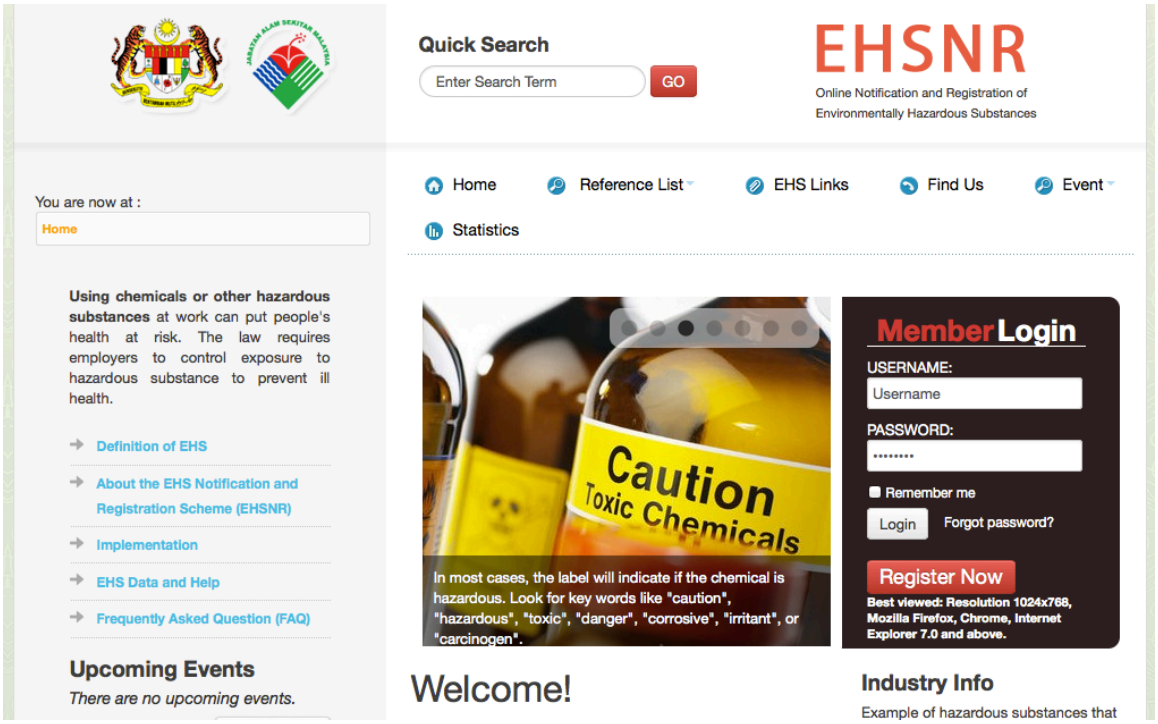


Figure 24: Screenshot of the EHSNR homepage, which can be accessed via the following link: <https://www.e-ehs.doe.gov.my/app/webroot/portal/> (DOE 2012d) [Accessed 2 June 2015].

Obstacles

The presentation of the EHSNR appears to be catered to those who are in professions where chemical use is involved. Indeed, the DOE's annual report states that the webpage "is an improved version designed to accommodate industries [*sic*] needs" (DOE 2012a, p. 75). As an unregistered visitor and a member of the Malaysian population that lacks expert knowledge in chemicals, the author was unable to identify any significant obstacles that could be mentioned here. It was, nonetheless, notable that such a registry exists in the country as it could possibly contribute to transparency and public participation.

5.2.2.8. *Environment Institute of Malaysia (EiMAS)*

EiMAS is an institute attached to the DOE that serves to improve the knowledge and skills of environmental officers and practitioners in Malaysia. The institute is utilised by the DOE for training of enforcement officers, with courses also offered to the private sector for training personnel that deal with environmental management. According to EiMAS, the institute serves:

1. To enhance manpower resource development programmes for environmental management;
2. To develop and intensify capacity building in the field of environmental protection; and
3. To implement programmes and activities that will promote the application of cleaner production technologies and best industrial environmental management practices

(DOE 2015)

Obstacles

This is more useful to environmental professionals, which is beneficial to have in Malaysia, but does not seem to be involved in educating or informing the public. Much more can be done by such an institution, such as offering environmental courses for school teachers to boost their knowledge on sustainable development and how to communicate such knowledge to their students through engaging educational activities. They could also collaborate with NGOs in training enforcement officers, in order to add local knowledge and

diversity of opinions on methods and mechanisms needed for maintaining the health of the environment.

5.2.2.9. *Malaysian Investment Development Authority (MIDA)*

This Government agency is under the purview of the Ministry of International Trade and Industry. It provides information on environmental policies and management in Malaysia, and guidelines on the environmental requirements placed on industries that plan to invest in the country.

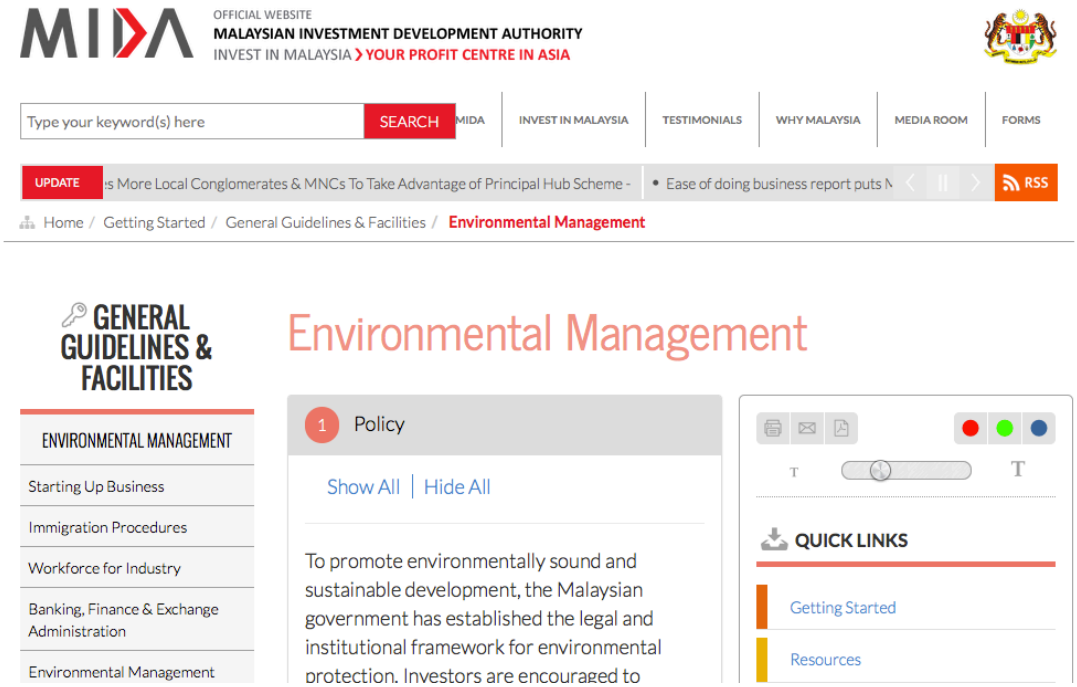


Figure 25: MIDA's website (2015) provides some useful information for investors and general guidelines on environmental management in Malaysia.

Obstacles

No specific obstacles that are significantly related to this research topic can be reported here. After all, MIDA is not a Ministry that directly addresses environmental matters. Nevertheless, the author included the Ministry's website here as it reflects some of the steps that the Government is taking in ensuring that foreign investors are informed of the country's environmental requirements. In this sense, environmental information, such as on environmental laws, can serve to inform foreign investors and also local people who are interested in conducting business in Malaysia.

5.2.2.10. *1Malaysia One Call Centre (1MOCC)*

The 1MOCC appears to be the main portal of the Government of Malaysia in that it is supposed to be the main point of contact for anyone who wishes to get in touch with any Governmental bodies, but does not know where to start. According to its website, it functions as "a single point of contact center that operates 24 hours a day, seven days in a week to answer any public enquiry, complaint, suggestion and feedback via phone call, short messaging system (SMS), fax, email and social media" (Government of Malaysia 2014). This statement is slightly misleading because the 1MOCC does not actually function to provide answers to public enquiry, but instead serves to get them in touch with the ministry, department, agency, centre, institute, or specific officers who might hold the information they need. In theory, this is a service that should be helpful to members of the Malaysian public (and also foreigners) who may wish to obtain

specific information from the Government of Malaysia, but simply do not know which Government body is holding the information, or for people who may wish to contact a certain department but do not know the contact details or person they should get in touch with. In practice, however, such a service requires preparation of knowledge and training on handling public enquiries.

Obstacles

The author attempted to contact the 1MOCC to enquire on whether its information booklet was available in English. The e-mail response received was written in poor English, the e-mail was unprofessional and it appeared as though personnel managing the 1MOCC were not well trained to handle information requests. It was obvious that the 1MOCC could not be approached by foreigners who may wish to seek specific information from the Malaysian Government, and if used by Malaysians in their national language, there is no guarantee that their requests will be attended to in an efficient and professional manner.

5.2.2.11. *1Akses*

This is an online service that was spotted by the author at the time of writing (September 2015), hence it is believed to be extremely new, as it had not appeared in previous searches. Upon further investigation, the author found that it is hosted by the Malaysian Administrative Modernisation and Management Planning Unit (MAMPU)[143], but it appears to have been built into most official

[143] MAMPU is overseen by the Prime Minister's Department and is responsible for "modernizing" and reforming the public sector.

websites of Government bodies. 1Akses is basically a search engine (similar to the concept of Google) that allows the public to access Government-held information. It is labeled as the "Official Government Search Engine" (MAMPU 2015). In theory, it is a great tool to have available for the public to do quick searches on any Government-held information online while browsing other information from one of the official portals. Other than the little search engine that appears on the websites, it also has a main website of its own[144].

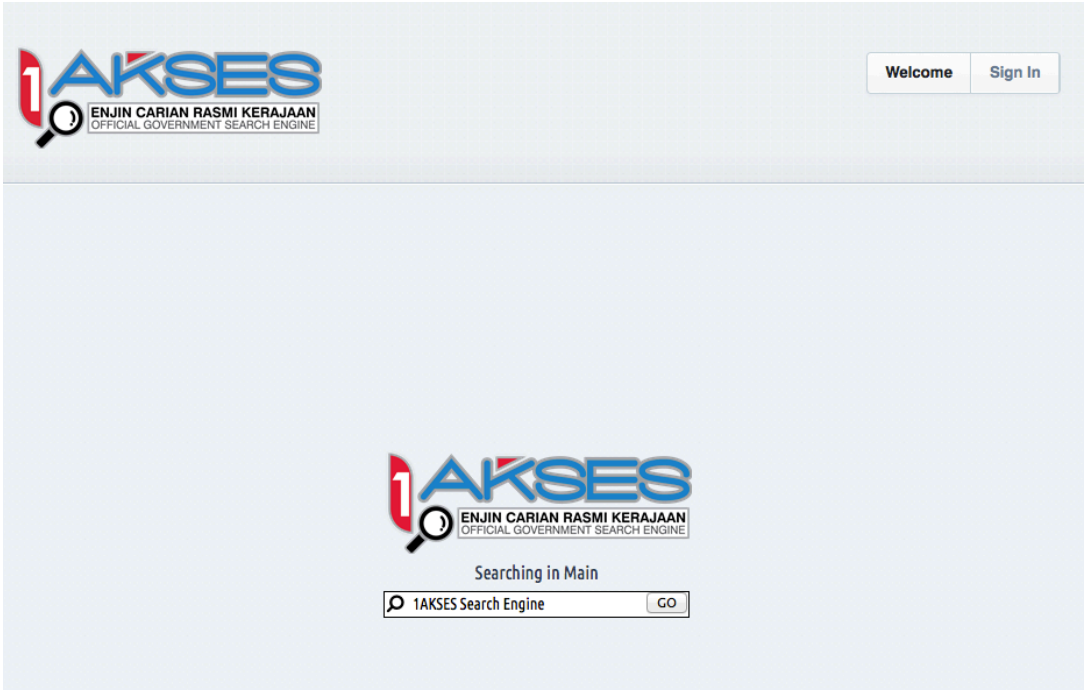


Figure 26: Screenshot of 1Akses search engine's homepage (MAMPU 2015)

[144] The website is made available at <http://1akses.malaysia.gov.my/> (MAMPU 2015) [Accessed 17 Sept 2015].

Obstacles

In practice, the search engine neither works effectively nor efficiently. It is slow, and even simple one-word searches frequently did not produce any search results. For example, the author attempted to search for “Lynas” and “rare earth” but neither terms produced any search results, whereas information relating to these specific terms are available on other Government portals. A search on the “Ministry of Science” resulted in a strange list of repetitive links to an open data portal but did not include the obvious, most relevant result to such a search, which should be the Ministry’s official website! The search results that the author obtained from its main portal also appear to display mostly documents held by MAMPU, instead of precise results pulled from relevant Government archives and departments. Thus, this search engine can make the process of information-searching more complicated and difficult, rather than efficient and convenient, as users will be forced to take extra steps to reach the information they are looking for. As a search engine, it does not function to do what it is supposed to, that is to help people obtain the information they are searching for, and it certainly does not assist in cutting down the time and complication that it would normally take for one to search for Government-held information.

5.2.2.12. ***Public InfoBanjir***

As its name indicates, Public InfoBanjir (with “banjir” meaning “flood” in the Malay language) is an online source that informs the public of potential floods and noted increase of water levels in surrounding rivers. The portal provides an

interactive map of Malaysia, highlighting rivers and areas vulnerable to flooding, and provides an indication of water levels accompanied by warning alerts including a short message telling residents to be careful and aware. The portal is managed by the Department of Irrigation and Drainage. It can be accessed through <http://publicinfobanjir.water.gov.my/> (Department of Irrigation and Drainage Malaysia 2011) [Accessed 17 July 2014].



Figure 27: Screenshot of Public InfoBanjir (Department of Irrigation and Drainage Malaysia 2011)

Obstacles

This website was previously unattached to the DOE's main website, which was considered unusual to the author, but it has now finally been linked to the DOE's main portal. The author's recent observation on the major floods that

occurred in 2014/2015, however, indicates that this method of informing the public may not have been very effective as several people who the author spoke to said they were not aware that the flood would arrive so quickly and at such a large scale. Their state of being unaware may arguably be due to a combination of various reasons, such as their inability to access information, lax attitudes towards such alerts (as they were accustomed to floods each year), and perhaps the limitations of the current technology, which may be able to alert people of rising levels of water, but not the scale of the floods that would occur. Many people who become victims to floods also happen to live in villages by the coast, oftentimes in poor conditions, and may not be able to gain quick access to online resources during urgent situations. Hence, it is difficult to tell whether or not this tool for disseminating information would be useful to the people most affected by floods. Nonetheless, it could still be helpful for the public to refer to, but its form and function should be improved over time and needs to be more actively promoted.

5.2.2.13. ***Malaysian Meteorological Department (MetMalaysia)***

After the tragic incident that occurred with the 2011 tsunami in Japan, and the various earthquakes of neighboring Indonesia, this department's responsibility with regard to providing up-to-date information related to the environment has arguably become more important in recent times, especially as noticeable changes in climate patterns have been reported in mainstream

media[145]. MetMalaysia provides weather forecasts and warnings that alert Malaysians on earthquake, tsunami, tropical cyclone and storm, and recently strong winds and rough seas as well as heavy rain. This information can be referred to through its online portal, where it also provides an online application form that users can submit to request for relevant data and information, such as satellite image and data as well as past weather forecasts, among others (Malaysian Meteorological Department 2015d). MetMalaysia also offers a weather forecasting app, myCuaca, which is available to download on Android and iOS. The department is under the purview of the Ministry of Science, Technology and Innovation (MOSTI).

Obstacles

The MetMalaysia's website provides useful information, but like many other official Government websites, it is designed and organised in a way that appears cluttered. This acts as a barrier to obtaining information in an easily accessible and convenient manner as it creates visual obstructions that can make it difficult for members of the public to search and find the information that they are looking for. Referring to the landing page of the website, for example, the author noted that under the MOSTI heading, there are two banners that move at the same time, which can be quite an eyesore to visitors. The top banner places priority on displaying the names and faces of the Minister and Deputy Minister of MOSTI,

[145] Such as in the following article from The Guardian (Carrington 2014): <http://www.theguardian.com/environment/2014/aug/11/extreme-weather-common-blocking-patterns> [Accessed 19 September 2014].

before sliding on to announce the latest award and certification achieved by the department.

The author's search of MetMalaysia in social media found that the Department is indeed actively present in various social media platforms, such as Facebook[146], Twitter[147], and Instagram[148] (no Youtube channel was available, however). Surprisingly, its main website does not provide quick links to any of these social media platforms, except for a small button that leads visitors to following its Instagram profile, which was made visible at the very bottom of the webpage where the author was almost unable to notice its existence. The introduction of its mobile application, which has so far received satisfactory reviews from users, was displayed as a slow-moving announcement within a small box on the website, and not included in one of its top banners. Needless to say, much can be done to improve how MetMalaysia displays and disseminates important environmental-related information to the public, and how it presents itself as a fundamental component of the Government.

5.2.2.14. ***Official Portal of Parliament of Malaysia***

This is the Malaysian Parliament's official website. It contains various information in the form of documents concerning parliamentary debates and laws that are soon to be enacted. It might not provide specific information on the

[146] https://www.facebook.com/malaysiamet (Malaysian Meteorological Department 2015b) [Accessed 10 Nov 2015]
[147] https://twitter.com/malaysianmet (Malaysian Meteorological Department 2015a) [Accessed 10 Nov 2015]
[148] https://www.instagram.com/metmalaysia/ (Malaysian Meteorological Department 2015c) [Accessed 10 Nov 2015]

environment, but environmental issues that have been discussed in parliament can be found here and it does provide daily transcripts through its Hansard (record of proceedings) archive when sessions are convened. The parliament's publications, such as its annual report, are also made available through this online portal[149].

Obstacles

The portal has some inconsistencies in that certain information, such as those under the Hansard section, was inaccessible for visitors who surf the webpage in English mode (as the documents were apparently unavailable in English). This seemed fine at first glance, but while remaining in the same English mode, the author discovered that the Risalat[150] section was able to list down its documents, even though they were only available in the Malay language. Nevertheless, upon attempts to access the Hansard through Bahasa Malaysia mode, the author was indeed able to successfully search through the Hansard archive as well as download one of the documents for viewing and saving.

[149] The portal can be accessed through the following link: <http://www.parlimen.gov.my/index.php?&lang=en> (Parliament of Malaysia 2015) [Accessed 22 July 2015].

[150] To be sincere, the author is unsure of the exact meaning (i.e. official definition) of this term in the context of Malaysia's legal and political system, and a search on what this term directly translates to in English did not produce any helpful results. Nevertheless, upon investigation of the Risalat section, the author believes that this term is used to describe the list of papers that were presented in parliament. However, several links in the section of the Senate Risalat for example, were broken and so the author could not determine the purpose of having this section made available to the public if the materials are not all made available and accessible. **This is a challenge in accessing information that the author encounters not only as an academic but also as a member of the public. It is possible that the situation would be more challenging for laypersons with less knowledge on where to search and locate information that is held by the Government**.

5.2.2.15. *e-Federal Gazette & e-Warta*

The e-Federal Gazette is the official portal under the Malaysian Attorney-General's Chambers. Like the Parliament's portal, it might not cater specifically to providing information on or related to the environment, but can nonetheless be considered a credible source of information for referring to various laws in the country, including those that cover the environment. In this regard, it could be used to obtain information or knowledge on the existence or amendments made to any laws that may involve the environment[151].

Related to the e-Federal Gazette is the e-Warta, a web portal that is wholly owned by Percetakan Nasional Malaysia Berhad (PNMB), which is the appointed printer for the Government of Malaysia to print the Laws of Malaysia. Through e-Warta, the Gazette is published daily for public viewing online at http://www.e-warta.com.my/, and/or when required by the Government of Malaysia after 5.00 p.m. (PNMB 2010). It claims to be "the electronic version of the *AUTHORITATIVE* Laws [sic] in Malaysia which consists of Federal Gazette and States Gazette" (Ibid). A compilation of the printed copy of the daily Gazette called "Weekly Gazette" is made available for public viewing and download on Monday the following week (Ibid). Upon further investigation, the author found that users are given an option to subscribe to the full text of online daily Gazette by filling in a short form available on the website. The e-Warta portal informs visitors that various parts of its publications will be displayed on the website for

[151] This portal can be accessed through the following link: <http://www.federalgazette.agc.gov.my/> (Attorney-General's Chambers 2015) [Accessed 21 November 2015].

only seven days. After that, the contents will be permanently transferred to the e-Gazette section at the following link: http://www.lawnet.com.my/ (PNMB 2015).

Obstacles

Both portals function well in delivering the information held by the Attorney General's Chambers. As it is not a part of the Government that deals specifically on environmental matters, the author cannot comment more on its service or presentation of information. Nevertheless, it can be an important source of information for referring to environmental cases. Its visibility and the knowledge of its existence to the general public could thus be further improved, such as through public announcements and online notifications.

5.2.2.16. ***Relevant Ministries***

Although matters that directly concern the environment in Malaysia are managed by the Ministry of Natural Resources and Environment (with the DOE as its enforcement arm), being a crosscutting issue involves the vital cooperation of other Ministries as well. Below, the author lists down the names of Ministries in Malaysia that provide information related to the environment, which are accessible to the public online and in print (whenever available):

- *Ministry of Natural Resources and Environment (NRE)*
- *Ministry of Energy, Water and Green Technology (KeTTHA)*
- *Ministry of International Trade and Industry (MITI)*

- *Ministry of Urban Wellbeing, Housing and Local Government (KPKT)*
- *Ministry of Science, Technology and Innovation (MOSTI)*
- *Ministry of Health (MOH)*[152]

Obstacles

There are reportedly issues surrounding behaviors and culture in the workplace, such as working in silo and lack of communication in, as well as between, ministries and Government agencies (Author's observation during field work; Interview and personal conversations with various Government civil servants). Overlapping duties and fragmentation can also cause confusion among members of the public regarding who should be responsible for providing certain information. Ultimately, the cracks and gaps that exist in responsibilities mean that certain environmental issues are more likely to be left unaddressed, hence the public and environment may suffer from a lack of strategic action and effective implementation.

In addition to the information provided by Government authorities as described and analysed above, other sources from which the public may obtain environmental information include local and international media, academic institutions, environmentally focused websites, NGOs and social media. Due to

[152] The Ministry of Health may not provide specific information on the environment, but as it deals with matters concerning public health and disease control, it offers information on efforts being made to address the health and safety issues that relate to the public's environmental surroundings such as cases involving landslide, haze, and river pollution, as well as food or water contamination. The Ministry is responsible for answering citizen concerns regarding any particular issues that relate to public health, and is especially referred to in providing expert and scientifically-backed medical inputs on any given case or situation that may pose threats to the nation's health and wellbeing. Many of these cases can be linked to environmental concerns.

the scope of this research, the author will not delve into the details of each of those particular sources. It is, nevertheless, vital to acknowledge their role in supplying information to the public that the Government may not have provided, and in a manner that the public can easily and readily understand i.e. laymen form. The role of the media, NGOs, digital technology, and social media will be further explored in later parts of this chapter and thesis.

5.3. PART 2: PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING

In this part of the chapter, the author will list down, analyse and discuss the venues for the public to participate in environmental decision-making, as provided under Federal legislation.

5.3.1. *Opportunities for Public Participation in Federal Legislation*[153]

Jendroska (2001) mentions that "[c]ooperation of environmental authorities with the public is commonly considered in the world as a prerequisite for efficient implementation of environmental policy" (p. 153). In Malaysia, the opportunity for citizens to participate in environmental decision-making through formal

[153] This part of the research also focuses on Peninsula Malaysia, and specifically on exploring public participation in environmental decision-making. Forms of public participation that are not closely related to environmental matters will not be examined in this research, due to the scope of the research topic and time limitation.

procedures is available, but has been reportedly limited (Emang 2006, p. 4)[154]. Maidin (2011) observes that "statutory rights guaranteeing public participation in planning decision-making, [are] the principal means in developed legal systems to incorporate the opinion of the public whose environment can be affected by a particular development. This is largely absent in the Malaysian planning system" (p. 148). To investigate the extent of public participation opportunities available through Malaysia's formal environmental decision-making processes, the author seeks to identify and discuss in this part of the chapter the Federal laws that may be able to offer some channels for participation to the Malaysian public. The author's exploration of these laws is as below.

5.3.1.1. ***Environmental Quality (Amendment) Act 1985 & Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987***

(enforced by the DOE)

The Environmental Quality (Amendment) Act of 1985 is an Act that amended the EQA 1974 in order to introduce Environmental Impact Assessment (EIA) as a mandatory legislative requirement in Malaysia. This amendment effectively enforced Section 34A, which requires any person intending to carry out any prescribed activity to submit an EIA report to the Director of Environmental Quality for examination (DOE 2007, p. 23, Appendix 1; Laws of

[154] According to Emang (2006), "[i]n the Malaysian system, there is a formal provision for public involvement although this tends to be general and limited in its detail" (p. 4).

Malaysia 1985)[155]. As a result of this amendment, the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987 was introduced and enforced in April 1988 (Ho 1990, p. 10; Briffett et al. 2004, p. 222). The EIA Order of 1987 legally requires project proponents to carry out an EIA for a range of prescribed activities (DOE 2007, p. 25-32, Appendix 2). There are nineteen categories of activities that are prescribed, including those related to "agriculture, airport, drainage and irrigation, land reclamation, fisheries, forestry, housing, industry, infrastructure, ports, mining, petroleum, power generation, quarries, railway, transportation, resort and recreational development, waste treatment disposal, and water supply" (DOE 2007, p. 15). An example of a project that would require EIA would be the construction of dams and man-made lakes or artificial enlargement of lakes with surface areas of 200 hectares of more (DOE 2007, p. 26).

The EIA reports, which are prepared by consultants that are registered with the Department, are then reviewed by authorities at the DOE for approval, revision, or rejection (DOE 2007, p. 6; Lye 2002, p. 663-664). In the context of this research, the EIA Order is important in that it functions as a critical step in a process that could lead to allowing public participation to take place in

[155] The 2007 revised version of the DOE handbook on EIA procedures and requirements reveals that the Department had already required EIAs to be conducted by "competent individuals who are registered with the DOE under the EIA Consultant Registration Scheme" (DOE 2007, p. 6). The DOE made it clear that EIA reports prepared by individuals who are not registered with the DOE will be rejected. Nevertheless, it should be noted here that an amendment was made to Section 34A in 2012, which requires that the person intending to carry out any prescribed activity "shall appoint a qualified person to conduct an environmental impact assessment and to submit a report thereof to the Director General in the manner as the Director General may prescribe" (Act A1441). Perhaps this amendment serves to cement the DOE's already established requirement of having EIAs be conducted by "competent individuals" as a legally enforced requirement.

environmental decision-making. To understand where public participation may take place, it is important to clarify the structure of the EIA process in Malaysia. Basically, there are two types of EIAs in Malaysia:

1. **Preliminary EIA**[156] - processed and concluded by the Department of Environment State Offices.
2. **Detailed EIA**[157] - processed at the DOE headquarters in Putrajaya.

(DOE 2007, p. 13)

Figure 28 (Preliminary EIA) and Figure 29 (Detailed EIA), displayed in the next pages, are diagrams that show the processes involved in the two branches of EIA procedures in Malaysia (DOE 2007)[158]. The author has slightly adapted these diagrams to clearly indicate the stages of the processes, including where public participation is required and where it is not as well as a suggestion of which stage it could potentially take place.

[156] According to the DOE's guide for investors on environmental requirements, the Preliminary EIA "is assessment of impacts due to those activities that are prescribed. The Preliminary EIA report is reviewed by a Technical Committee consisting of the Department of Environment State Offices and other relevant government agencies" (DOE 2010, p. 6).

[157] "Detailed EIA is a procedure undertaken for those projects with major/significant impacts to the environment…The Detailed EIA involves EIA report display for the public and affected community to comment…The Director General of Environment may request a Detailed EIA for other prescribed activities as he deems necessary" (DOE 2010, p. 7).

[158] The author has labeled (in red text) the stages of the EIA process that take place during the procedures.

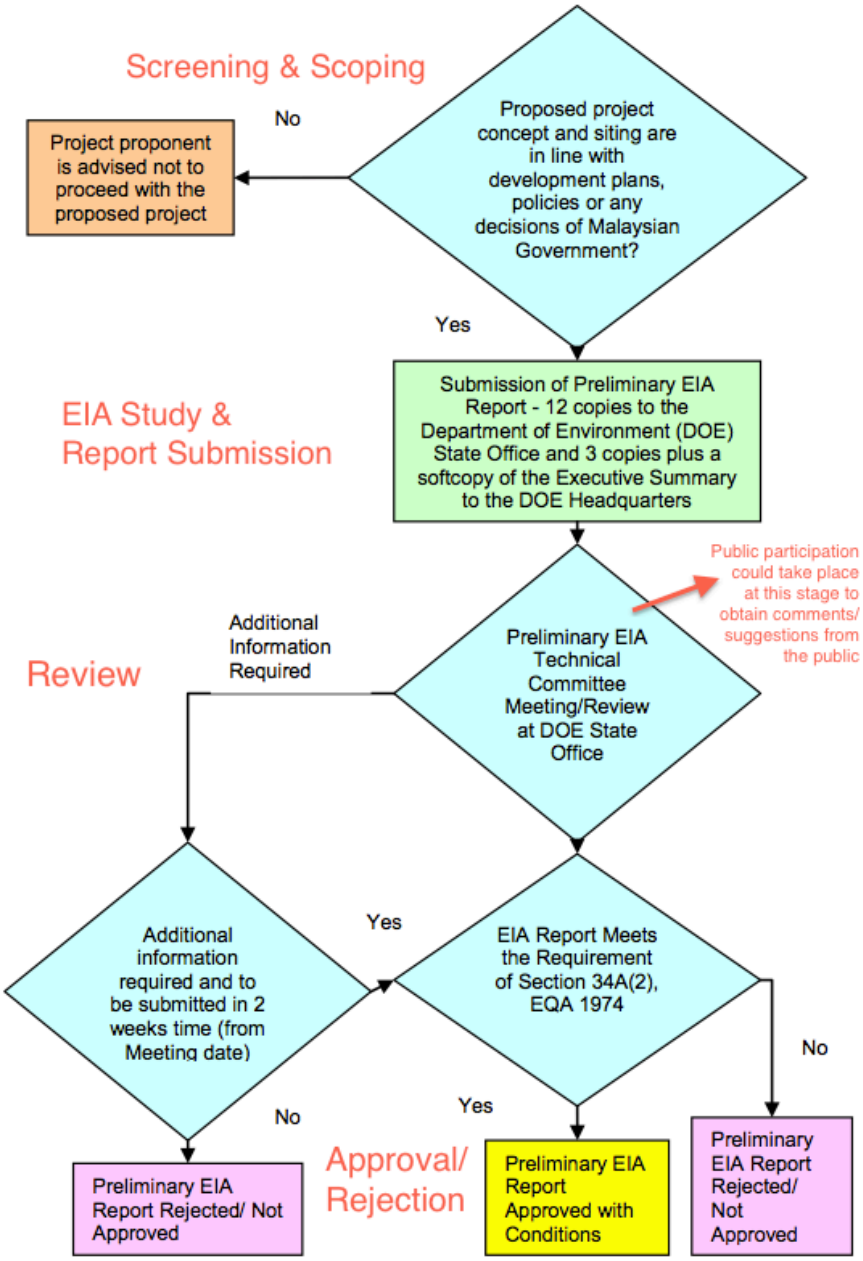


Figure 28: Procedures for Preliminary EIA, extracted from DOE (2007) and adapted by the author. Public participation is not required here. Hence, the author has included a suggestion of where public participation could take place in the Preliminary EIA process.

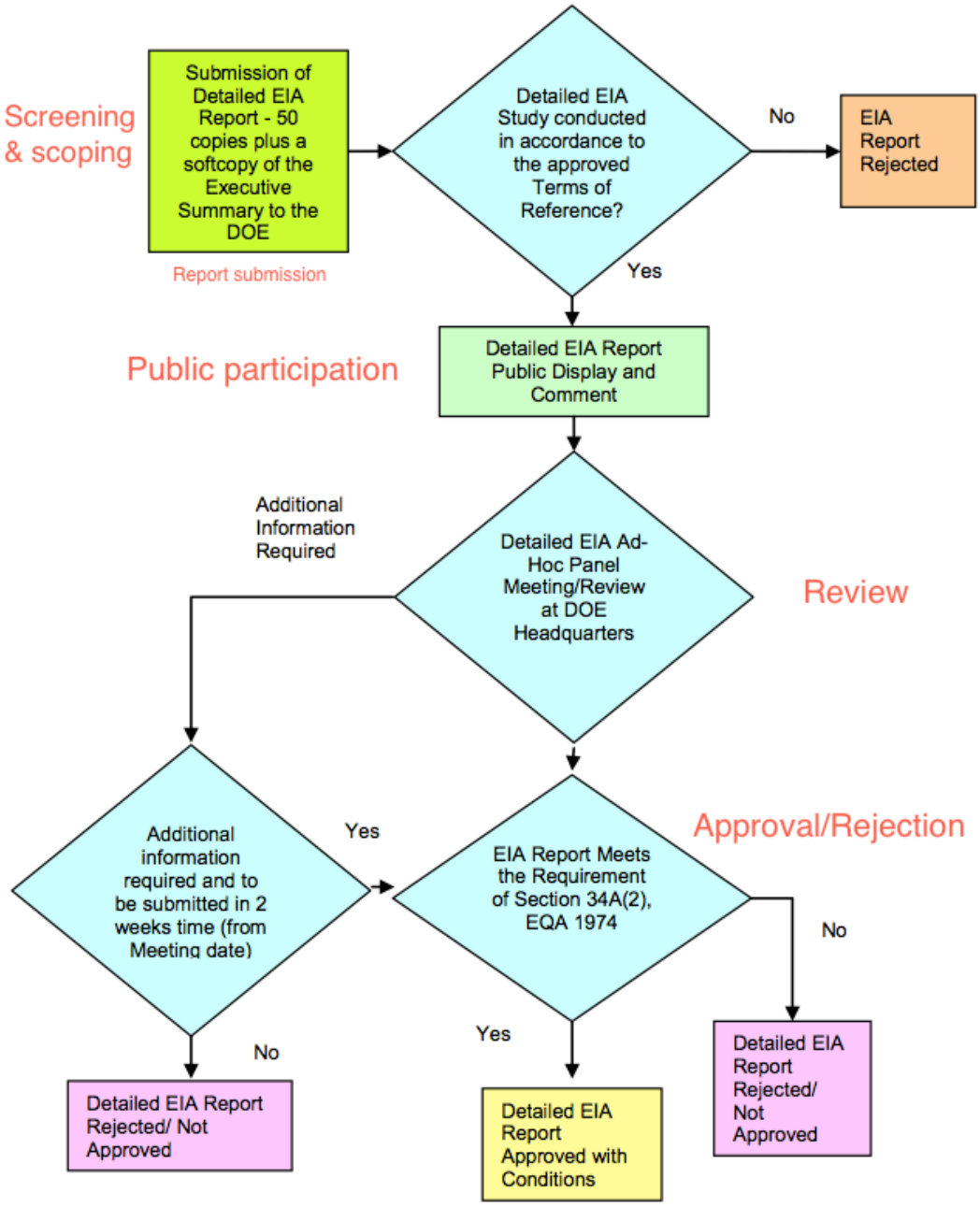


Figure 29: Procedures for Detailed EIA – Public participation is legally required here, as indicated in the light green rectangular box above that states "Detailed EIA Report Public Display and Comment" (DOE 2007).

Public participation in the EIA process appears in the form of displaying the EIA report for public review and comments. This procedure is supposed to take place when a project falls under the prescribed activities that necessitate a **Detailed EIA (DEIA).** Projects that would require a DEIA are, for example, construction of a coal-fired power plant, pulp and paper mills, and projects that involve land clearing where 50% of the area or more have slopes exceeding 25 degrees (with the exception of quarries) (DOE 2007).

When a DEIA is requested from industries, in accordance with the DOE's EIA Guideline's list of scheduled activities, the prepared EIA report needs to be displayed to the public for 30 days before the project can be considered or approved: "Detailed EIA Reports are also displayed at all Department of Environment Offices, as well as public and university libraries for public comments. The public are widely notified through the mass media when and where the Detailed EIA Reports are available for review and comment" (DOE 2007, p. 14; Norhayati Mohamad Yusof 2012, p. 12). The author was informed by Government officers from the DOE and other departments that "public participation" is the key procedure that separates the DEIA from the Preliminary EIA (Interview with senior DOE officer, 21 Dec 2014). However, public participation in this process is limited to allowing the public to gain temporary access to the EIA report in order to review and submit comments, if any, on specific matters stated in the report. The author was made to understand that an EIA report for a DEIA is no different from one that is prepared for a Preliminary EIA. Thus, the author was led to believe that the procedure is considered "detailed" only because it is made available to the public for review and

comments, which will then be examined by an ad-hoc panel. It has been observed that while a DEIA appears to involve more stringent rules when described in literature, the element of public participation becomes, in practice, the main difference that has been emphasised and upheld in the DOE's official statements to the media (Chooi 2012b)[159].

The public's review and comments on the (Preliminary) EIA reports are not legally required, and thus public participation is perceived as unnecessary for activities not listed under the prescribed activities that would require a DEIA. An Annual Report by the DOE shows that in 2012, a total of **335 EIA reports** were received and processed. Out of this total, 322 were Preliminary EIA reports, while **only 13 were DEIA reports** (DOE 2012a, p. 22). Thus, while the EIA in Malaysia may be considered a legally enforced tool that has potential to offer the public an opportunity to voice concerns on some development projects, it has been limited as the public only really stands a chance of having a say on plans involving specific types of development (i.e. those listed under the prescribed activities that necessitate a DEIA). This indeed poses as a barrier to meaningful public participation in environmental decision-making as it significantly limits the opportunities for the public to be informed and to be involved in the decision-making process. From the reported amount of DEIA reports submitted, it would seem that these specific types of development projects do not often occur or, as

[159] An article posted through an independent online news portal, The Malaysian Insider, reported the DOE's hazardous substances division director, Datin Paduka Che Asmah Ibrahim's statement to journalists that "the only key difference between the PEIA and the DEIA was merely the element of public engagement. 'The scope of the study is essentially the same. The procedure is different but the terms of reference are the same'" (Chooi 2012b).

the author will discuss further in the case of the Rare Earth Controversy (in Chapter 6), the projects that people would have expected to be categorised under DEIA were simply not required to be so by law (such as those that involve the processing of radioactive products or wastes). Hence, it can be argued that in most cases, the public's opportunity to be involved in the environmental decision-making process is limited.

The opinions and comments made by NGOs and experts regarding the EIA process implemented in Malaysia have also indicated some weaknesses in the system, which includes a lack of information and proper public engagement. For example, according to the NGO, Sahabat Alam Malaysia (SAM), "[d]espite the usefulness of the EIA process on paper, it has lost most of its impact on the ground to protect the environment" (2004, p. 162). SAM (2004) argues that one of the biggest flaws of the EIA process is the timing and that "the lack of effective public participation does not result from a lack of interest but due to **poor sharing of information and inadequate notification** [emphasis added] on the part of the DOE" (p. 163). There have also been reports of the procedures being rather unrepresentative of the public involved: "Even when there is participation, some groups are seen to be more interested in advancing their own agenda rather than representing real public interest" (Rosnadhirah Ramli et al. 2012).

Nevertheless, at the time of writing (12 October 2015), the author was surprised to discover that a new EIA Order had just been gazetted in August 2015 (Attorney-General's Chambers of Malaysia 2015). The Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015

was only recently published in the DOE website (on 15 September 2015, to be exact), and states that it **effectively revokes** the previous EIA Order of 1987.

The author's examination of the new law reveals that the new EIA Order of 2015 divides the prescribed activities requiring an EIA into two schedules:

1. **The First Schedule** - wherein the 2015 Order states under Section 3(2), "The activities specified in the First Schedule do not require public display and public comment unless otherwise instructed, in writing, by the Director General" (Attorney-General's Chambers of Malaysia 2015)**.** This provision appears to grant more power to the DG to decide on allowing the public to participate if it is needed or necessary.
2. **The Second Schedule** – where it is stated in Section 3(3), "The activities specified in the Second Schedule require public display and public comment". Section 5 provides a clear statement of what "public display and public comment" refers to, which is "a display of a report, at a place and within the time determined by the Director General, to obtain public comment in relation to that report" (Ibid).

As the law was introduced very recently, and at a time when the author was in the completion phase of this thesis, the author was unable to obtain further clarification on what this would mean for EIA procedures and requirements as a whole. Does this mean that there will be no more use of the terms "Preliminary EIA" and "Detailed EIAs"? A Terms of Reference (TOR) is required in preparing Detailed EIA reports. TORs are described by the DOE as follows: "The TOR or

scoping exercise will identify key issues and further outline the environmental data collection that are required, determine the assessment techniques to be used and identify the appropriate methodologies for impact prediction and assessment. Thus this procedure is a vital stage in the detailed EIA procedure" (DOE 2007, p. 36). The DOE further explains that the key aspect of this scoping process is "to ensure the environmental impact assessment is at the appropriate level of detail, corresponding with the scale and significance of the proposed activity. Scoping will ensure that the critical issues are fully addressed" (Ibid). Therefore, as the TOR is a vital procedure involved in preparing a Detailed EIA, what would become of it with the introduction of the new EIA Order 2015? Would it still apply for Schedule 2 of the Order? The author has not found any provisions in the law that indicates the need for a TOR, but perhaps it may be requested through a new set of guidelines and procedures that the DOE might prepare and publish. At a glance, it seems that there would be no need for the terms "Preliminary" and "Detailed" EIAs to be used, but it is likely that the procedures that were practiced through the processes displayed in Figures 28 and 29 would remain the same.

The introduction of a new EIA Order that legally and expressly provides a clear list of activities requiring public participation can be regarded a positive change as it may be a sign that environmental laws and regulations in Malaysia are adapting (slowly but surely) to the increasing environmental needs of the country as well as the environmental expectations of Malaysian society. Nevertheless, the author noted that public participation in the EIA process under

the new EIA Order was still limited to submission of comments on EIA reports only.

Due to the very recent introduction of this new legal instrument, the author's limited scope of research and opportunity to explore the new EIA procedures further did not allow sufficient time for deeper investigation and more critical analysis than those that the author has provided above. That said, although the previous EIA process implemented under the revoked EIA Order (of 1987) has now been discontinued, it is believed that the author's exploration, analysis and discussion surrounding this process along with its weaknesses were still worthwhile to include in this thesis, as it had been adopted and enforced by the Government for many years, including throughout the duration of this research, and was implemented in the case study's first unit of analysis (i.e. the Rare Earth Controversy).

5.3.1.2. *Town and Country Planning Act 1976 (Act 172)*[160]

Town and country planning in Malaysia requires the cooperation of both Federal and State governments. In accordance with the Concurrent List of the Malaysian Constitution, the Federal Government is responsible for overall national planning while States have the responsibility for planning the use and development of land in each state. The Town and Country Planning Act 1976 (TCPA) offers some avenues for the public to participate in the decision-making

[160] According to the Act's preamble, it is "An Act for the proper control and regulation of town and country planning in Peninsular Malaysia and for purposes connected therewith or ancillary thereto" (Laws of Malaysia 1976, p. 7). A link to the legal document can be found at: <http://www.pht.org.my/legislation/Town_and_Country_Planning_Act.pdf> [Accessed 7 July 2014].

process, such as those stated under Sections 9(1)(b)[161], 9(2 and 3)[162], 10(3)(b)[163] and also 10(4)(b) [164], 11B(3), 12A(b), 13(2 and 3), 14 and 15(1) (Laws of Malaysia 1976). Beginning with the preparation of the draft structure plan, these legal provisions remind planning authorities that the public are entitled to provide their opinions or express their objection towards any matters included in the draft plan, thereby promoting public engagement at local and State level from an early stage of the planning process. The TCPA also insists that the public should be informed through local newspapers, that copies of the plan should be made available at designated places, and that the public should be informed of the time period in which they would be allowed to state their objections, if any[165]. The same procedures are also to be applied in the preparation of the draft local plan.

The TCPA, however, does not provide further details on how the public's feedback regarding the draft plans should be managed or considered in the planning process. At the time of writing, there appears to be no specified procedures or guidelines prepared by the Government on the processes or methods that should be adopted when considering public opinion during the course of planning. Hence, it seems that such considerations are left to the planning authorities to manage and decide. The "consultation" approach that has been adopted so far may allow members of the public to communicate their opinions, but how these opinions are integrated into the final decision is

[161] Persons can make representations to the State Director if they have the desire to do so.
[162] Regarding publicity of draft structure plan and time allotted for public to make objections, if any.
[163] Opportunity to appear before a Committee, so that objections that were made (and not rejected) could be heard.
[164] Please refer to these remaining Sections in the document of the law for more details.
[165] This time period is stated in the law as being one month from the date of the first appearance of the notice.

unknown, thus giving off the impression that decisions ultimately rest on the State authorities (i.e. that people do not possess much influence in the decision-making process, which would not result in an effective manner of participation). As Harding and Azmi Sharom (2007) explains, "Although the TCPA requires public consultation, it says nothing about the extent to which the views of the public should be considered. It would appear that, although there is a right to object to a plan, there is no guarantee that input from the public will be absorbed into the final plan" (p.132). In the report on the Kuala Lumpur Structure Plan[166], for example, there is a section that states the Dewan Bandaraya Kuala Lumpur has received and heard public comments and opinions in the process of drafting the Structure Plan (Ainul Jaria Maidin 2011). However, the report mentioned only the number of objections and meetings held to listen and attend to public views, but **did not include further details on the comments such as stating what exactly were the people's objections, and whether their views had affected the direction of the original plan** (Ibid). Maidin's observation supports the author's view that in the case of the Kuala Lumpur Structure Plan, "it is rather difficult to comment on the importance accorded to public views by the planning authorities. **It appears that the role of the public in participating in the development plan preparation process in Malaysia has yet to achieve the desired results**, i.e. to obtain constructive public opinions and views" (p. 152).

[166] Information on the Kuala Lumpur Structure Plan can be referred to through the following link: <http://www.dbkl.gov.my/pskl2020/english/> (Kuala Lumpur City Hall 2015) [Accessed 21 October 2015].

5.4 THE ROLE OF NON-GOVERNMENTAL ORGANISATIONS (NGOs)

According to Torgler et. al. (2010), "[a]ssociations formed for the purpose of environmental protection have become one of the most trusted institutional forms when it comes to the task of solving environmental problems" (p. 95). They reported that the 2002 Eurobarometer of the European Opinion Research Group found that almost fifty percent of Europeans held a high level of trust in these organizations, and stated that "[i]n fact, the degree of trust in environmental organizations is higher than the degree of trust in their national governments or the institutions of the European Union" (Torgler et. al. 2010, p. 95). Their findings can be related to the survey results published by Edelman Trust Barometer, which shows that fewer than half of Malaysians trust their Government (Malay Mail Online 2015a).

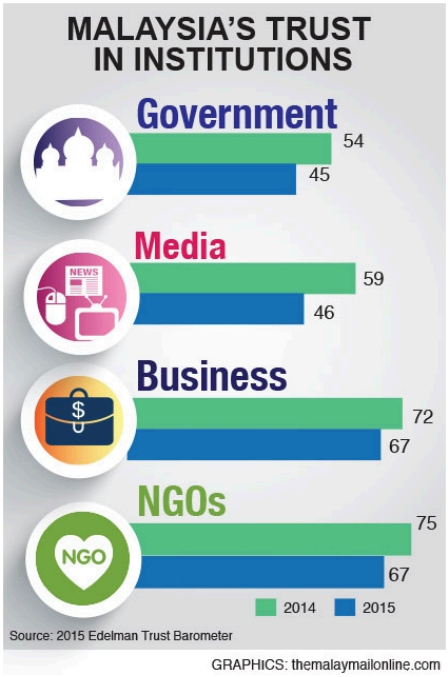


Figure 30: Malaysia's Trust in Institutions as reported by Edelman Trust Barometer. Source of graphic: themalaymailonline.com

With reference to Figure 30, the author's own survey, although much smaller in sample size than the one conducted by Edelman, appears to point in a similar direction of public trust towards NGOs. When given the statement "*I feel that if I express my concerns on the environment, the Government will listen to me*", only 6.25% of participants in the author's online survey stated they strongly agree, while 12.5% said they agree. The majority of participants were divided between disagreeing (37.9%) and holding a neutral stance (40.63%). There was even 3.13% who strongly disagreed. However, when participants were given the statement "*I feel that if I express my concerns on the environment, the NGO(s) will listen to me*", the percentage of participants that strongly agreed rose to 15.63% while a significant majority of them (59.38%) stated they agree with the statement. Although several participants (21.88%) remained neutral, and few disagreed (3.13%), no participant had strongly disagreed. This is important to note as it appears to display an aspect of public perception towards the Government and who people might be likely to turn to in helping to solve their environmental problems.

NGOs in Malaysia have indeed played an important role in communicating environmental concern to the Government, media, and public at large. NGOs in Malaysia, therefore, have more often functioned as watchdogs, although the perception now is that Government attitudes towards NGOs have changed, and that they are given more opportunities to communicate and collaborate with authorities (interview with NGO representative, 12 Feb 2014). However, issues may also arise with allowing NGOs to speak on behalf of the public, as they do not necessarily represent the interests of the people. There should be more

opportunities for individual members of the public to be informed and to be given a chance to voice their opinions, not necessarily through NGOs that may hold different agendas. As highlighted by Dwivedi et al. (2001), "NGOs are by necessity often quick to move on to other projects once they have achieved their immediate goals, and this raises problems as well: '…The actual consequences of a court victory, a policy change, or cancellation of a project are not necessarily experienced in the same way by the local populace as by more distance NGOs, who can declare the battle over and move on'" (Kingsbury 1999, quoted in Dwivedi et al. 2001, p. 269).

Nevertheless, it is still better to **have NGOs present as a part of civil society** than not having them at all, as **they can represent the voices of minorities or those of vulnerable groups. NGOs could also work in partnership with the Government to help each other be better connected and for the public to feel more engaged with their policymakers.** This is important in the context of democracy and good environmental governance, which is relevant to this research, and would certainly be helpful to the advancement of access to environmental information and participation in environmental decision-making.

5.5 CHALLENGES AND LIMITATIONS TO IMPLEMENTATION

Malaysian Bar President Christopher Leong stated in a news interview that "although Prime Minister Datuk Seri Najib Tun Razak had once declared that the days of 'government knows best' were over, the prosecution of individuals – over the past few days – who have been perceived to have challenged or questioned authorities deny the very humility that declaration presupposes'" (Zolkepli & Sivanandam 2014). As discussed throughout this chapter, the author has learnt that while Malaysia is lacking information or "sunshine" laws, there is some amount of access to environmental information, in both passive and active forms, that are being provided to the public, while opportunities for participation in environmental decision-making is formally made available under the EIA Order (of 1987 then, and 2015 now). Nonetheless, the author has also discovered several key existing challenges that may be posing as barriers towards the advancement of access to information and public participation in Malaysia. Such restrictions may deter Malaysians from being informed of their environmental surroundings, and exclude them from effectively participating in the environmental decision-making process. The author discusses them in the next subsection.

5.5.1. *Restrictive Laws*

Malaysia is currently ranked at second to last amongst all the countries listed in the Environmental Democracy Index (EDI) of The Access Initiative (TAI) (World Resources Institute & TAI 2015)[167]. The EDI ranks the countries based on their enactment of strong national laws, and should thus not be mistaken as a measurement of the countries' actual implementation of procedural rights. The author opines that even through its limited indicators, which are actually quite thorough and comprehensive, the EDI could nevertheless be a valuable source of comparative information on the status of environmental democracy laws that are in or coming into existence around the world. In the case of Malaysia, the deficiency in laws that expressly uphold the pillars of environmental democracy is arguably exacerbated by the presence of laws that strictly limit the dissemination of information to the public and their chances of effectively participating in environmental decision-making processes. Through analysis of academic literature and legal statutes, a few of these laws have been identified. The author summarizes and discusses their relevance to this research, as below.

[167] According to Jesse Worker of the TAI (2015), "The Environmental Democracy Index (EDI) is the first online public platform that tracks countries' progress in enacting national laws to promote transparency, justice, and citizen engagement in environmental decision making. The index evaluates 70 countries, across 75 comprehensive legal indicators and 24 limited indicators of practice, based on objective and internationally recognized standards established by the United Nations Environment Programme's (UNEP) Bali Guidelines. It draws on national laws and practices that were assessed and scored by more than 140 lawyers around the world". This statement can be found through the comments section of the following blog post he published in the World Resources Institute (WRI) website:
<http://www.wri.org/blog/2015/05/best-and-worst-countries-environmental-democracy>
[Accessed 20 Jan 2016].

5.5.1.1. *Official Secrets Act 1972 (OSA)*

The OSA, which is based on the Official Secrets Act of the United Kingdom, prohibits the dissemination of information classified as an official secret (Laws of Malaysia 1972). The Act defines "official secret" to mean "any document specified in the Schedule[168] and any information and material relating thereto and includes any other official document, information and material as may be classified as 'Top Secret', 'Secret', 'Confidential' or 'Restricted', as the case may be, by a Minister, the Menteri Besar or Chief Minister of a State or such public officer appointed under section 2B" (Laws of Malaysia 1972, Section 2(1)).

Abu Bakar Munir and Siti Hajar Mohd Yasin (2009) explained that when the OSA was introduced, it was meant to equip the Government with adequate power to deal with spies of foreign countries (p. 44). However, over the years, the enforcement of the OSA has garnered much criticism due to its vague but strict form. For example, the Act contains broadly framed prohibitions, which is perceived to deter the free flow of information from official sources. In the context of this research topic, the OSA plays a major role in the current system of access to information in Malaysia. Indeed, with its broad coverage of what constitutes "official secrets", the powers it grants on any Minister or designated public servant to classify (and declassify) any Government document as an "official secret", and the strong punishment it places on those who breach it, Government officials, civil servants and staff may arguably prefer to play safe by keeping information to themselves. As observed by Abu Bakar Munir and Siti Hajar Mohd

[168] The Schedule includes "Cabinet documents, records of decisions and deliberations including those of Cabinet committes; State Executive Council documents, records of decisions and deliberations including those of State Executive Council committees; Documents concerning national security, defence and international relations" (Laws of Malaysia 1972, Section 2A).

Yasin (2009), the prohibitions declared under the OSA, "are backed by severe criminal sanction and the State has extensive powers which enhance its ability to detect infringements and secure convictions under the Act. Decisions to obstruct access to information are beyond judicial scrutiny" (p. 45). There are also no penalties enforced on Government authorities that withhold from the public any information not classified under the Act (Article 19 & CIJ 2007, p. 38). In their report, the civil society organization, Article 19, and the Centre for Independent Journalism (CIJ) compiled and published a list of convictions that have been carried out under the OSA (p. 19). They argue that due to the various nature of the cases, it has been more difficult to identify "precisely what information is properly withheld under the OSA, and what information is merely being withheld without any legal requirement to do so" (Article 19 & CIJ 2007, p. 38).

5.5.1.2. ***Sedition Act 1948 (Revised 1969) (SA)***

The SA is another law that originated from Malaysia's colonial past. It prohibits actions, speech, words, publication or "other thing" that the Act characterizes as a "seditious tendency" under Section 3(1)[169], with the first being "to bring into hatred or contempt or to excite disaffection against any Ruler or against any Government" (Laws of Malaysia 1948, Section 3.1.a). Seditious tendencies may also include "to excite the subjects of any Ruler or the inhabitants of any territory governed by any Government to attempt to procure in the territory of the Ruler or governed by the Government, the alteration,

[169] The law can be referred to via the following link:
<http://www.agc.gov.my/Akta/Vol.%201/Act%2015.pdf> [Accessed 17 July 2015].

otherwise than by lawful means, of any matter as by law established" (Section 3.1.b), as well as "to promote feelings of ill will and hostility between different races or classes of the population of Malaysia" (Section 3.1.e). The act grants powers to authorities to suspend newspapers containing "seditious matter", allows the court to prohibit circulation of "seditious publications", and gives authority to police officers ("not below the rank of Inspector") to arrest without warrant anyone who has committed, attempted to commit, or suspected to commit any offence under the Act.

Similar to the OSA, criticisms made against the SA have revolved around its vague definition of "sedition", which indeed could be open to various interpretations, as the author has observed through her own analysis of the legal statute. With reports of incidences involving the arrest of politicians, academics, students, bloggers, and others that have surfaced over the years, it is understandable that the SA's broad definition of sedition has been regarded as being susceptible to abuse by authorities. Abu Bakar Munir and Siti Hajar Mohd Yasin (2009) believe that the vague provisions of the SA provide insufficient notice of what conduct is prohibited, stating that "they are an invitation to abuse and authorities may seek to apply them in situations which bear no relation to the original purpose of the law or to the legitimate aim sought to be achieved" (Abu Bakar & Siti Hajar 2009, p. 48). According to literature and news reports, Government authorities have invoked the SA on various occasions (Pak 2014; McChrystal 2015). Some believe that such actions could cause restrictions to freedom of speech and expression, suggesting that they were carried out to

curtail dissenting views (Article 19 2015; Amnesty International 2016; Iskhandar Razak 2015).

The arrest of an academic in May of 2014 has further escalated public concern regarding the scope and interpretation of the SA, which has never before been used on anyone from academia. Associate Professor Dr. Azmi Sharom, who lectures on law at Universiti Malaya and writes a column in a well-circulated local newspaper, was charged with sedition over comments he made regarding the 2009 Perak Constitutional Crisis, which was published through an online news article (Grudgings 2014). After he was arrested and charged for sedition, around 300 academics and concerned individuals gathered to express their solidarity with Dr. Azmi, while calling for the SA to be repealed (The Star 2014d). They felt that "'[c]harging Azmi over his informed views reveals a lack of respect for the universal principles of academic freedom'", and further stated that "as long as one did not espouse violence or promote hate, there was no law in the modern world that could justify the criminalizing of thought and public speech" (Ibid).

In the context of this research, it is necessary to acknowledge the SA's role in Malaysian society because this law, like the OSA and the recently repealed Internal Security Act 1960 (ISA), could arguably lead to increasing fear amongst the Malaysian people. Being fearful of expressing one's opinions could arguably affect how people obtain and digest environmental information, as well as the ways in which they participate in environmental decision-making processes. In 2012, Prime Minister Najib Razak announced that the Act would be repealed (Associated Press 2012a), but in 2014, he stated that it would instead be

retained and strengthened as well as made more effective (BBC 2014b). The law has since been reviewed and in 2015, amendments to the Act were passed. Now, the SA's maximum jail time has been stretched to 20 years (it was previously three years for a first offence) and more notably, its jurisdiction has been extended to include the World Wide Web, where online propagation of sedition is made illegal (Ibid). While the revised law no longer regards insulting the Government as a seditious act, it does ban any speech that could incite religious hatred (Agence France-Presse (AFP) 2015a). According to Najib Razak, "In order to realise our goal of building a stable, peaceful and harmonious state, the Sedition Act has been maintained…We will not and cannot stand for the incitement of racial or inter-ethnic conflict" (BBC 2015b).

The intention of wishing to prevent racial and religious conflicts amongst members of the uniquely diverse society of Malaysia appears reasonable, but the lack of a narrow definition or guideline of what could pass or be considered as speech that incites hatred (or religious hatred specifically), leaves the law, once again, open to interpretation. The provision of such a law may not appear to directly affect discussions on environmental issues or specific cases of environmental transgressions, but as the environment is a cross-cutting topic that has at times been linked to religious or spiritual beliefs[170], the presence of such a law may indeed place limitations on the extent of information that is allowed to be

[170] At the time of writing (21 October 2015), an article written in Malay language on the problem of haze that has been developing over the past week at an alarming rate of danger to public health reported that a coalition of Islamic NGOs in Malaysia has expressed their request for the National Fatwa Commission to issue a fatwa declaring whether Malaysian companies that are involved in causing the forest fires in Indonesia that led to the recent series of haze problems in the region are committing "unIslamic" actions or not (Faiz Zainudin 2015). The article can be referred to through the following link: <http://www.freemalaysiatoday.com/category/bahasa/2015/10/21/jerebu-majlis-fatwa-didesak-bersuara/> [Accessed 20 October 2015].

disseminated as well as the kind of discussions that are allowed to take place in public, which could affect how people participate in Malaysia.

5.5.1.3. *Printing Presses and Publications Act 1984 (PPPA)*

The roots of the PPPA can also be traced back to colonial times, in which newspapers were required to have a permit to publish each year (Shahanaaz Habib 2012). The PPPA serves "to regulate the use of printing presses and the printing, importation, production, reproduction, publishing and distribution of publications and for matters connected therewith" (Laws of Malaysia 1984b, Preamble). Under the PPPA, it is illegal to possess or use an unlicensed printing press (Section 3). The Minister is also given the power to grant or refuse a printing licence and permit to publish as well as to revoke or suspend them (Section 3.3); Section 6). Concerns expressed over the PPPA have underlined the risks of delegating power to one individual member of authority who can make the ultimate decision of who would be allowed to publish what (Abu Bakar Munir & Siti Hajar Mohd Yasin 2009, p. 48; Lee 2012b). Since the amendments to the Act that were made in 2012, the PPPA appears to no longer provide the power of "absolute discretion" to the Minister under Section 3. However, the Act states that he/she may still "at any time revoke or suspend such licence for any period he considers desirable" (Section 3.3). A closer inspection by the author also discovers that Section 7(1) on "undesirable publications", states that the Minister may "in his absolute discretion by order published in the Gazette prohibit either absolutely or subject to such conditions as may be prescribed the printing,

importation, production, reproduction, publishing, sale, issue, circulation, distribution or possession of that publication and future publications of the publisher concerned". While Section 13A states that the Minister's decision to grant, refuse, suspend or revoke a license or permit shall be final, Section 13B does grant a person with the right to be heard before the decision is made.

Although amendments to the Act have been made, it appears that the critical discourse that has remained from the enforcement of such a law is, once again, centred on the potential for its abuse by authorities. For example, Section 4(1) states that printing press used for unlawful purposes include production of any publication or document "(a) which is obscene or otherwise against public decency; or (b) which contains an incitement to violence against persons or property, counsels disobedience to the law or to any lawful order or which is or is likely to lead to a breach of the peace or to promote feelings of ill-will, hostility, enmity, hatred, disharmony or disunity". However, the law does not further explain what exactly is the scope of "public decency" and what would constitute promoting the abovementioned "feelings". What would be considered, specifically, an act of promoting disunity, for instance? This is perhaps one of the reasons why such a law has been regarded by some as a legal mechanism that could be used to apply limitations on freedom of the press and freedom of expression. As mentioned by Lee (2012) "Critics have in the past blamed the PPPA for stopping political discourse from being printed in the country's newspapers".

At the beginning of July, 2015, the Home Ministry enforced a 3-month suspension on the printing permits and publication of two popular financial

newspapers, *The Edge Weekly* and *The Edge Financial Daily*, allegedly due to its reports on a controversial issue that was described as being critical of the Prime Minister and Government (Menon & Chow 2015). According to news sources, The Edge was issued a show-cause letter for publishing "what the government deemed to be unverified news" and having broken the law that is enforced under the PPPA (Lim 2015a). The Edge Media Group publisher and CEO, Ho Kay Tat, responded by saying, "This is nothing more than a move to shut us down in order to shut us up" (Lim 2015b). However, on 21 September 2015, the Kuala Lumpur High Court quashed the Home Ministry's suspension order, ruling that the Ministry had "acted irrationally and illegally by issuing the suspension order" and that it had also "breached procedural fairness when issuing a show-cause letter to the publisher" (Yap 2015).

In discussing the relevance of this law to the research topic, the limitations applied by the PPPA on the extent of what the press could cover in its news reports may hinder, for example, journalists from making efforts to investigate and report on wrongdoings committed against the environment, or simply to publish an article on development-related activities that might be detrimental to the environment, for fear of stepping on any powerful person's toes. The public, therefore, would be excluded from being informed on such matters of importance, and would also be unable to respond by providing their views or questions to accountable leaders, which could have actually been helpful and beneficial to the nation as well as the Government in their shared vision to develop sustainably and inclusively.

5.5.2. *Power Dynamics*

Other than the enforcement of certain laws in the country discussed above that might seem restrictive for public access to environmental information and participation, there has also been an observed lack of openness in the culture and in general public discourse, which may arguably be due to the power dynamics present in Malaysian culture and society[171]. According to Sahabat Alam Malaysia (SAM)[172], a Malaysian NGO that is a member of Friends of the Earth International, "[t]he process of policy development in Malaysia is still essentially a 'top-down' affair, with some participation from interest groups or non-governmental organisations at various stages of the policy formulation and implementation process…" (SAM 2004, p. 166). **The author noted the manifestation of this top-down structure in the behaviour of not only public servants, but NGOs as well.** Requests for information or interviews, in the experience of the author, would be made to the top official, director, head of Department, or person in charge, who may then agree to be interviewed. However, on most occasions, the author was only given the opportunity to obtain information from one person (in one Department), as the rest would follow the top official's answers (i.e. answering as a team or in unison)[173].

[171] The subject on the role of Malaysian culture within the context of this research topic will be explored further and discussed in Chapter 4.
[172] Their official website can be accessed at: <http://www.foe-malaysia.org/> (SAM 2015) [Accessed 10 August 2015].
[173] Refer to Chapter 4 for a more in-depth discussion and analysis of power dynamics in Malaysian culture.

5.6 CHAPTER SUMMARY

Developed countries have benefitted from having legislation that allows for access to environmental information, such as the United Kingdom's Environmental Information Regulations 2004, the United States' Freedom of Information Act (FOIA), and Canada's Access to Information Act 1985. Although there is no main legislation that specifically aims to provide Malaysians with access to environmental information and participation in environmental decision-making, such as that mandated through the Aarhus Convention, there are laws in existence that do function to allow for access, albeit in a limited manner. Access to information in a developing country like Malaysia still remains slim and participation has been limited to the form of one-way consultations i.e. review and comments on a report only. As discussed in this chapter, there are rules and procedures that continue to thwart the development of access to information and public participation in Malaysia. However, there have also been changes made in the past three years since this research began, which might indicate that there is hope for further improvements to be realised by the Government in the next few years to come. As Nomura and Sakumoto (1997) point out, "[i]t is true that in many Asian countries, while there are signs of movements towards political democracy, the governments continue to restrict free speech and violate human rights. In the area of environmental problems, however, a growing number of countries are establishing institutional support to promote citizen participation" (p. 4). Through the author's research and observation on access to environmental information and public participation in Malaysia, the trend towards public

engagement and involvement in Government decision-making processes has indeed developed fairly rapidly over the past few years. Some movements that are cropping up to demand greater transparency and accountability from the Government have been increasingly able to conduct peaceful protests, without aggressive actions taken by the police (Author's observation). This is arguably a great milestone in the history of participation and expression in Malaysia as it points to the fact that the Government and law enforcers are also learning to adapt to the changing nature of Malaysian society and their needs, and perhaps becoming more used to seeing members of the public expressing their opinions openly. It is hoped that access to environmental information and participation can be further enhanced and advanced in Malaysia, so that the Government and citizens may benefit from increased knowledge and dialogue on environmental concerns, which are in urgent need of all actors to be involved in addressing and solving.

CHAPTER 6

THE RARE EARTH CONTROVERSY IN MALAYSIA

6.1 INTRODUCTION

In 2011, a group of residents from the state of Pahang, Malaysia, initiated a series of protests against the construction of a rare earth refinery in Gebeng, Kuantan, by Lynas Corporation Ltd[174]. The anti-Lynas groups voiced concerns over the plant's operations and its "radioactive waste", arguing that it would be detrimental to human health and the environment. They also claimed that they were not consulted beforehand, and demanded for the plant to be immediately shut down. The situation escalated further in the form of street protests, a long march from Kuantan to Kuala Lumpur, an open gathering of reportedly 5,000 participants, an increasing emergence of anti-Lynas sentiments online and broader media coverage of the situation.

The focus of this chapter is placed on the research case study's first unit of analysis, which is the Rare Earth Controversy that was partly described above. The subject of this specific unit of analysis was selected as the author observed that the situation surrounding the Rare Earth Controversy could be related to public access to environmental information and participation in environmental decision-making in Malaysia, which would make it worthwhile to dissect and

[174] Lynas Corporation Ltd is an Australian company that supplies Rare Earths. Its official website states that it is "set to provide the first new source of supply of Rare Earths outside of China" (Lynas Corporation Ltd 2013).

critically analyse. Through examining and discussing the dimensions of this unit of analysis within the scope of the research, the author hopes to obtain valuable insights into the manifestation of challenges for “access” that are currently faced in the country. Studying the events that occurred in this controversy could also be useful in understanding the dynamic relationship between the Malaysian Government and citizens in the context of the environment, through observing how citizens reacted to the situation as well as how the Government responded to public backlash and protests over LAMP.

This chapter will first explain what rare earths are, provide an overview of their link to environmental issues, and briefly examine China’s influential role in the market, as background knowledge of these coveted metals is central to understanding the rare earth market’s influence on the subject matter. The author will also discuss literature findings on Malaysia’s history and experience with rare earths. The exploration and findings of the events surrounding the Rare Earth Controversy will be presented in four parts. Through active observation and analysis of the complex interactions that were exchanged between citizens, policymakers, industry representatives, scientists, media and other actors that occurred in the context of the incident, the case of the Rare Earth Controversy may serve to impart lessons that could contribute to improving access to environmental information and public participation in environmental decision-making in Malaysia.

It is important to note, however, that the author does not possess the capacity or intention to reveal the “truth” or to prove which of the involved actors’ arguments are valid and which ones are not. Instead, the author’s objective is to

discuss what had occurred in this situation, present the arguments and responses of the main parties involved in the controversy, and provide an analysis of where weaknesses in access to information and public participation may have played a role in exacerbating the situation. In this chapter, the author will attempt to provide a critical and in-depth exploration of the situation and arguments raised within the context of the research topic, according to the information gathered from a diverse range of sources.

6.2 UNDERSTANDING RARE EARTH ELEMENTS

6.2.1. *What are Rare Earths?*

Rare Earth Elements (REEs), also known as rare earth metals (REMs) or Rare Earths (RE), are a group of seventeen chemically similar metallic elements, including the fifteen lanthanoids or lanthanides (with atomic numbers of 57 to 71), plus scandium and yttrium (British Geological Survey 2011, p.1; International Union of Pure and Applied Chemistry (IUPAC) 2016). When referring to REEs that are economically viable and utilised in many of today's smart and advanced technologies, the rare earth industry generally deals with fifteen of the elements, as displayed in Figure 31.

Element	Symbol	Element	Symbol	Element	Symbol
Lanthanum	La	Europium	Eu	Erbium	Er
Cerium	Ce	Gadolinium	Gd	Thulium	Tm
Praseodymium	Pr	Terbium	Tb	Ytterbium	Yb
Neodymium	Nd	Dysprosium	Dy	Lutetium	Lu
Samarium	Sm	Holmium	Ho	Yttrium	Y

Figure 31: 15 REEs generally found in the REE market, according to Innovation Metals (2013)

REEs are frequently categorised into groups of light REE (LREE) and heavy REE (HREE), with some sources indicating as well another group of middle or medium REE (MREE). However, the groupings of REEs into such categories are not consistent among authors (Zepf 2013, p. 14; Innovation Metals 2013; Hatch 2012). Although the groupings of REEs are not significant to the focus of this research topic, it is still worthwhile to acknowledge that they could be used to indicate how valuable a rare earth element is perceived in the market. LREEs are generally more abundant, and hence the availability of HREEs is of greater concern because some of them are crucial to renewable energy technologies (Zepf & Reller 2012, p. 3).

Aside from the groupings of REEs, uncertainties have also arisen regarding the availability of rare earth ore deposits that could be exploited. Indeed, the term “rare earths”, which has been used to refer to these fascinating elements, is repeatedly described as a “misnomer” (British Geological Survey 2011; Brennan 2013; Livelli 2015). Contrary to its name, rare earths are believed to be abundant and are thus not actually rare: “REEs are relatively plentiful in the Earth’s crust

having an overall crustal abundance of 9.2 ppm" (Rudnick et al. 2003 cited in British Geological Survey 2011, p. 1). Throughout researching the subject of REEs online, it was noted that sources of information on REEs from which many authors, journalists, and bloggers have made references to have not always presented facts that are complete or scientifically accurate. This is supported by Volker Zepf (2013), in his thesis on REE, where he delivers a careful analysis of this specific issue, explaining that "REE are often misunderstood, beginning from the grouping of the relevant elements to the etymological misconception, that REE are rare or the fact that REE are 'more abundant than gold'. Thus REE can get the impetus of being very abundant, which is only part of the truth…The problem here lies in a possible wrong perception which finally gets to a seemingly hard fact because 'everybody says so'" (Zepf 2013, p. 11). According to Zepf, rare earths cannot be compared and dealt with as one single element because each one possesses different characteristics that make it unique, and that there has been an inconsistency in abundance tables[175] introduced by different authors. Hence, he concludes "the message that REE are more abundant in the earth's crust than gold or platinum is of no economic use and rather misleading information" (Zepf 2013, p. 14).

While this research will not delve into detail on the abundance of REEs in the earth's crust or its chemical components and physical characteristics, the author acknowledges that caution must be observed in referring to statements regarding REEs, as the author had found, on several occasions, speculation and

[175] An abundance table is a table chart that shows the abundance of elements in minerals and provides an estimation of this abundance in the earth's crust by studying earth samples. According to Zepf (2013), "Today there are numerous abundance tables available with usually different approaches, assumptions and geographical sample areas, so that no uniform list can be presented" (p. 12).

half-truths that were made without show of evidence, and thus may not be necessarily true, to be widely published and distributed online. The author will further discuss the relevance of this issue to the Rare Earth Controversy in Part 4.

6.2.2. *Where can Rare Earths be found and mined?*

Whether rare earths are more abundant than gold or not, what makes them especially complicated to commercially exploit is in figuring out how to pinpoint where they are in the ground, and the best ways to extract them from the other minerals in which they are naturally found[176]. This is due to the fact that REEs are often located sporadically in the Earth's crust, and most likely attached to or surrounded by other elements. As observed by Haskin and Paster (1979), "[f]rom the geochemical point of view, the rare earths are 'dispersed' elements, i.e. spread around among many common materials rather than concentrated into a select few" (p. 2). Grasso (2013) adds that "[t]hese 17 elements are referred to as 'rare' because although relatively abundant in total quantity, they appear in low concentrations in the earth's crust and extraction and processing is both difficult and costly" (p. i).

Indeed, REEs are particularly challenging to mine as it is difficult to estimate which area would have enough concentrations that are worth exploiting. "We just don't know where they are'", Murray Hitzman from Colorado School of Mines and other experts emphasise (cited in Crow 2011, p. 37). "Unlike gold or silver, for

[176] According to Zepf & Reller (Zepf & Reller 2012), "rare earths do not occur as genuine elements, but rather as by-products in some minerals" (p. 3).

example, REEs do not occur in nature as metallic elements, but they are found in a variety of minerals. These minerals are not as abundant as rock forming minerals such as quartz and feldspar but are present in a wide variety of rocks, in most cases as accessory minerals" (Malaysian Academy of Science 2013, p. 4). There are more than 160 specific minerals known to contain REE, sometimes in traces, yet only three major rare-earth minerals comprise approximately 95% of all rare earth metal occurrences, and they are:

- Bastnaesite (approximately 83%)
- Monazite (13%)
- Xenotime + another nine minerals (4%)[177]

(Zepf & Reller 2012, p. 4)

Placers, on the other hand, represent a different type of rare earth deposits. They are the "erosion products of the weathering process of rocks with subsequent alluvial accumulation" and usually host monazites and xenotime (Ibid, p.4). However, Zepf and Reller point out that the problem with heavy sands such as monazite is that they often contain thorium and at times traces of uranium as well. Hence, mining heavy sands would require special handling (Ibid, p. 4) [178].

[177] "Baestnasite and monazite are mostly host minerals of the LREE, whereas xenotime contains mostly HREE" (Zepf & Reller 2012, p. 4).
[178] Understanding the differences in rare earth deposits will of upmost importance later on in the chapter, when the author presents her investigation of the controversy that took place in Malaysia.

There are several rare earth reserves around the world[179]. China holds the largest rare earth reserves, which account for close to 40% of the world's total reserve (Mining Technology 2014). This makes China the biggest rare earth producer, and this resource-rich country still continues to dominate the global rare earth market today. The biggest rare earth deposit is located in China's Bayan Obo, although recent explorations have begun to discover their significant presence in certain areas of Afghanistan and North Korea as well (Choi 2014; Els 2013). Outside of China, Mount Weld in Western Australia is known for having the richest source of rare earth to date, while the Mountain Pass mine in California used to be the largest REE supplier in the world until the 1970s. This is essential to note as Mount Weld and the rare earths that are mined there are linked to the Rare Earth Controversy in Kuantan, which will be later discussed in this chapter.

The pursuit of finding and mining REE reserves, however, does not appear to be slowing down or even limited to being within Earth's boundaries. In fact, there have been current debates on the feasibility of exploring and possibly mining the moon! (David 2010). The idea of the latter scenario taking place today may sound absurd to some, and may seem to be a long shot from reality. Nonetheless, serious efforts are being undertaken by industries in the mining and energy sectors to do just that. Countries such as China and the United States are investing in research and technology to further their dreams of extracting natural resources from the moon, which may include water, helium-3, and rare earths

[179] The United States Department of Energy provides an interactive map that displays rare earth deposits across the globe and countries with significant rare earth reserves.

(Institute of Physics 2015; Caminiti 2015)[180]. The race to mine the moon is a clear indication that there are no limits to humankind's desire to exploit natural resources, especially in the case of REEs and their unique properties that are increasingly perceived as being extremely vital to the advancement of the human race. It also goes to show how **important it is for public participation to take place because people should have a say in such decisions**, or otherwise anyone with enough resources and driven by greed could exploit the environment to their heart's desire, and may not care about the destructive consequences that their actions might leave on others.

6.2.3. *Why are Rare Earths so important to the development of new technology and the Green Economy?*

Traditionally, REEs emerged in the form of by-products as a result of industrial processes. For example, Crow explains that copper mining has resulted in "more than enough tellurium, a key component of next-generation solar cells, to cover our present needs – and made it artificially cheap" (Crow

[180] The Google Lunar XPrize Competition, for example, sets out to award $28 million to the winning team that is able to "land a robot safely on the Moon; move 500 meters on, above, or below the Moon's surface; and send back HDTV Mooncasts for everyone to enjoy" by the end of 2017. It claims to be the "largest international incentive based prize of all time" and aims to "open a new era of lunar travel by vastly decreasing the cost of access to the Moon and space" (XPRIZE Foundation 2015). This competition has been a driving force behind some of the efforts that are being pursued by companies that are also interested in the possibility of mining the moon for its resources. Moon Express, a California-based company that is supported by NASA, currently participates in the competition. The company, which has already received prizes by Google for achieving milestones in the competition, has displayed intentions of exploring the extraction of precious metals and rare minerals on the moon. Its Co-founder and Chairman, Naveen Jain, believes that such resources from the moon could be brought back to Earth to help address energy, health and resource challenges (Caminiti 2015). A statement on the company website appears to reflect this: "We believe it's critical for humanity to become a multi-world species and that our sister world, the Moon, is an eighth continent holding vast resources than can help us enrich and secure our future" (Moon Express Inc. 2013).

2011, p. 37). However, the current era of new and advanced technologies has created rising demands for these previously unsung elements. What used to be treated as by-products are now essential materials that are required in the functioning of daily technologies used around the world. As stated by Robert Jaffe (in Crow 2011) from the Massachusetts Institute of Technology (MIT), "[t]hen suddenly you have to think about mining these elements directly, as primary ores…That raises the cost dramatically – presuming we even know where to dig" (p. 37). What makes these REEs so prized and important in this day and age? According to the MIT, "REEs have many important applications in modern technology for which there is no equal substitute, but an increasing demand for these elements is straining supply" (MIT 2014). This is supported by Cindy Hurst's report on the rare earths industry in China, which stated that "[w]ithout rare earth elements, much of the world's modern technology would be vastly different and many applications would not be possible" (Hurst 2010, p. 3). Figure 32 displays the role of REEs in smart phones (specifically an iPhone).

REEs have become especially **essential to the development of green technologies** as well. Neodymium, for example, was first harnessed to generate the lights in green laser pointers, and are used today as magnets that keep motors of wind turbines and electric cars turning (Crow 2011, p. 38). REEs have also contributed to the evolution of miniaturised designs in technologies used today as their unique chemical components enable REEs to deliver high strength performance in small quantities: "Rare earth magnets are small, lightweight, and have high magnetic strength and so have become a key part of the miniaturization of electronic products" (Malaysian Academy of Science 2013, p.

9)[181]. **This application of REEs could arguably contribute to mitigating climate change effects** as it could reduce a car's weight, which would lead to decreasing energy consumption and lowering emissions in hybrid cars (Interview with Lynas representative, 30 Jan 2014; Zepf & Reller 2012, p. 6). As noted by Zepf & Reller (2012), "[p]robably the biggest chance that REE offer, are their characteristics – that is, intrinsic and partly unique physicochemical properties – which make them extraordinarily suitable for some of the most important climate-relevant applications" (p. 8). Included also amongst the modern technologies that depend on REEs are those that serve military purposes, which is critical to countries such as the United States that rely on a secure supply of REEs to meet its growing military demands[182]. Several studies have been carried out to discover new alternatives that could help to wean off dependence on these "magic" elements but there have been no other known elements that could replace them as yet: "People have been looking ever since day one to replace these things, and nobody's done it yet" (Karl Gschneidner cited in Crow 2011, p. 37).

[181] The Malaysia Academy of Science (ASM) also provides a table of selected applications of REEs and a summarized list of the unique properties of REEs that make them suitable for high technology and green technology applications, which can be found on p. 10-11 of its report (ASM 2013).

[182] Grasso (2013) discusses the US Congress and Department of Defense concerns regarding rare earth supplies for military purposes in his Congressional Research Service report, and provides a list as well as diagrams that display the wide application of rare earth in military defense systems. These can be referred to in pages 10-13 of the report, which is made available through the following link: <https://www.fas.org/sgp/crs/natsec/R41744.pdf> [Accessed 5 April 2014].

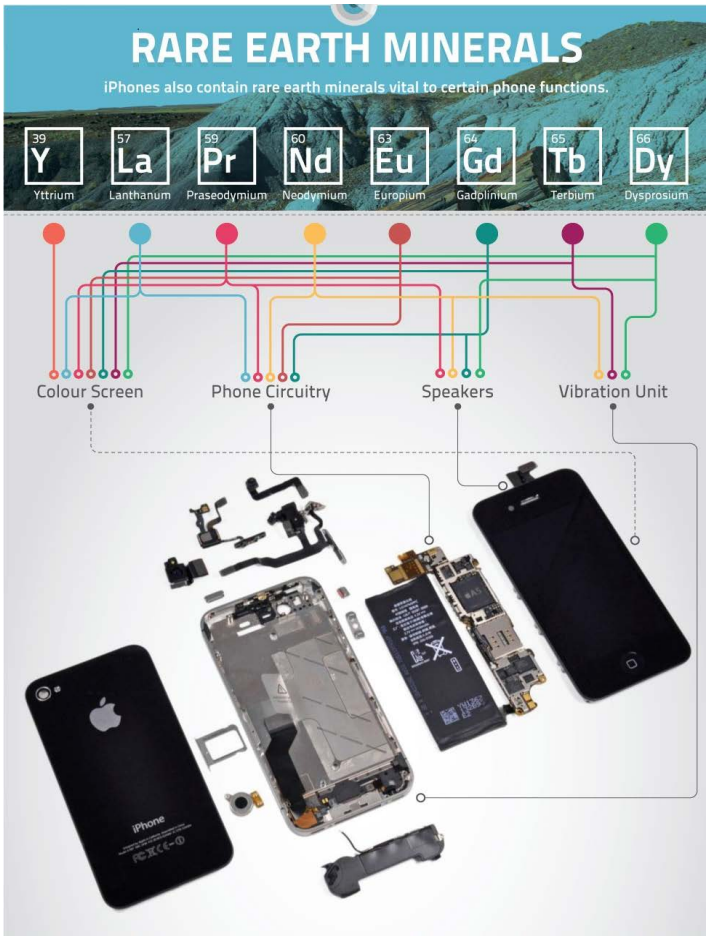


Figure 32: Rare Earth Elements in an iPhone (Rare Element Resources Ltd. 2014)

6.2.4. *What are the economic and environmental challenges involved in REE processing and application?*

Other than the challenges posed in locating and mining REEs, there are also issues that may be encountered in the processing and separation of the elements. In his explanation regarding the difference between rare earth “ores” and rare earth “concentrates”, an REE expert from Imperial College’s Royal School of Mines, informed the author that REEs are usually mined with other

elements attached to them (or which they are attached to), including minerals and metals as well as the dirt and rocks that make up the composition of the ores (Personal conversation, 10 May 2013). Rare earth ores are the materials that were mined, with all its impurities and other elements attached. When the ores undergo the crushing process, the dirt and rocks are separated from the more valuable elements, including the rare earths (Ibid). This results in a concentrated form of rare earths that would need to be further refined, which would involve several complex chemical processes to separate rare earths from other elements, as well as from one another[183]. The processing of rare earths is complex and relatively costly, and refining them involves a lot of chemical processing, as explained in Geology.com,

> "When elements of interest are found in two or more mineral phases, each requiring a different extraction technology, mineral processing is relatively costly. Many rare earth elements deposits contain two or more rare earth elements-bearing phases…Rare earth elements-bearing minerals, once separated, contain as many as 14 individual rare earth elements (lanthanides and yttrium) that must be further separated and refined… Rare earth elements, on the other hand, are typically extracted and refined through dozens of

[183] Kidela Capital Group (2011) provides an introduction to several methods that are used in the processing of rare earths, which ultimately produce RE oxides: <http://www.kitco.com/ind/Kidela/may102011.html>

chemical processes to separate the different rare earth elements and remove impurities"[184].

Hurst (2010) further highlights this complexity by explaining that each rare earth element requires its own unique extraction steps and chemical processes, and that sometimes, "these elements will require reprocessing to achieve the ideal purity. Once the elements are separated out, they are in the form of oxides, which can be dried, stored, and shipped for further processing into metals" (p. 5). **The process of extracting rare earths, however, have particularly raised serious concerns over public health and the environment**[185], especially as REEs can be naturally found together with thorium and uranium attached, which are radioactive elements, and hence need to be carefully managed: "the handling of the possibly radioactive by-product thorium requires special care, and […] the chemicals required for processing and refining create both waste gases and chemical waste waters" (Zepf & Reller 2012, p. 8). At the same time, the methods involved in mining REE, concentrating the ores and refining them through chemical processes that would separate the elements from non-essential minerals, demand a lot of resources such as energy, water, chemicals, and skilled workers. Kidela Capital Group (2011) mentions that in addition to the cost associated with using complex technologies and managing the disposal of radioactive waste, there are other costs involved as well:

[184] This was explained by Long et al. (2010) via Geology.com. Hurst (2010) also mentioned that "[m]ining gold, for example, is a much simpler procedure than mining rare earth elements…Rare earth elements are far more complicated and costly to extract" (p. 4).

[185] According to Hurst (2010), "The mining and processing of rare earth elements, if not carefully controlled, can create environmental hazards. This has happened in China" (p. 5).

> “It is clear that while mining material containing REEs isn’t all that complicated, processing the stuff is about as far from simple as you can get… All this means processing Rare Earths is not cheap – far from it. Because of the complex technologies involved and other issues, such as the disposal of radioactive waste, it can cost hundreds of millions of dollars to build a processing plant from scratch. And there are other costs to consider when going into the RE business, such as the considerable expense of ensuring adequate infrastructure and transportation systems are in place to support the mining and processing facilities and for transporting products out to market. There are also costs involved in building the necessary expertise and training up a labour force to the very high standards required for running a RE processing facility”.

The costs and complexities involved in mining and processing REEs are some of the main reasons why it has been challenging for some countries to create a complete supply chain that begins with the exploration and mining of the elements, to the final production and export of quality rare earth oxides or rare earth metals. Even after successfully refining the rare earths, the elements on their own may still be rendered useless if a country does not possess the right technology, technical know-how, facilities, and enough talented human resource to apply REEs for the creation of innovative products. According to Grasso

(2013, p. 15), “The supply chain for rare earth elements generally consists of mining, separation, refining, alloying, and manufacturing (devices and component parts)”. In the REE market, however, these processes have been fragmented, as one location would be used to mine the rare earths, while another would function to process and refine them, and finally the REEs would be exported to other locations that would possess the market, talent, and technological capability to manufacture the products, which utilise these elements, before finally selling it to consumers around the world. No country is capable of providing this whole supply and manufacturing chain of REEs, except for China, which controls more than an estimated 90% of rare earth production in the world (Interview with Lynas representative, 30 Jan 2014; Abraham 2016). Even the United States lacks the full capacity to process rare earths, hence China remains as the only exporter of commercial quantities of rare earth metals (Grasso 2013, p. 14)[186]. Areddy from The Wall Street Journal reports that “[a]t the moment, there's virtually no place for these minerals to be processed into something useful—except China” (Areddy 2013).

From the above discussion, the author has presented **how vital rare earths are to the world economy, to the advancement of (green) technology and to climate change mitigation/adaptation,** but also how complex the market and costly the processing of REEs can be. The next section will briefly explain the role of China in the REE market, as it can be argued that as **the world’s biggest producer, exporter and consumer of rare earths, China has had an**

[186] “Today, the United States almost entirely lacks the refining, fabricating, metal-making, alloying, and magnet manufacturing capacity to process rare earths” (Grasso 2013, p. 14).

influence on the direction of research and development, economic planning and policy actions of Governments as well as industry activities around the world, including those of Malaysia.

6.3 CHINA'S GRIP ON RARE EARTHS:

"There is oil in the Middle East; there is rare earth in China"

- Chinese leader Deng Xiaoping, 1992

From the 1940s to mid-1980s, the United States was the leading producer of REEs. The Mountain Pass mine in California, which was owned and operated by Molycorp, was the biggest REE-producing mine in the world (Morrison & Tang 2012, p. 8; Zepf & Reller 2012, p. 4). However, in 1986, China surpassed the United States as the world's top producer and major supplier of rare earths, and has filled these important roles ever since (Morrison & Tang 2012, p. 9). Analysts argue that China was able to take over the market due to several factors, including the mining and exporting of REEs at very low prices, the flooding of the REE market by more than tripling the previous world supply, the support to local rare earth companies provided by the Chinese Government, and the increasing interest of REEs adopted among Chinese industry and academia. These factors, along with cheap labor and lax environmental standards[187], are believed to have

[187] The author discovered a video on Youtube posted by a Chinese news source that reported on the pollution caused by the rare earth industry in China. This video can be accessed and viewed through the following link:

catapulted China to the top position that it holds in the REE market, and simultaneously eliminated competition, as mines in the United Sates and other parts of the world were unable to maintain profit, and were thus forced out of business (Morrison & Tang 2012, p. 9; Hurst 2010, p. 6; Hill 2011, p. 113[188]). Morrison and Tang (2012) also noted that China had invested heavily in rare earth refining and production technologies, which made its REE products even more competitive: "It developed cheaper processes that used hydrochloric instead of nitric acid and managed to refine extractions to higher purity, and reportedly better quality, than in the United States" (p. 10).

Over the years, the Chinese Government has been gradually reducing its export quotas and has continued to tighten controls annually (Skelton 2012). It is believed that this was done to keep the manufacturing process in the country, which would result in the production and selling of finished valuable goods to the world, as opposed to exporting only raw materials (Ibid; Interview with Lynas representative, 30 Jan 2014). It may also be due to the increasing demands of rare earth by Chinese consumers, who account for almost 60% of global consumption (Mining Technology 2014). In 2010, China announced that it would significantly restrict its rare earth exports to ensure a supply for domestic manufacturing and for environmental reasons. This announcement triggered panic-buying and caused some rare earth prices to increase dramatically (King 2016). In 2011, the average price of REEs shot up by as much as 750% in a

<https://www.youtube.com/watch?v=TGLC59rCCDc> (ChinaForbiddenNews 2012) [Accessed 17 April 2015].

[188] "95% of supplies are controlled by China, although this has been at considerable environmental cost. But the Chinese want these metals for their own technological revolution they have gradually reduced export quotas" (Hill 2011, p. 113).

year: “The problem was that China, which controlled 97 percent of global rare earth production, had clamped down on trade. A solution was brokered and the price shock faded, but the threat of future supply problems for rare earths and other so-called ‘critical elements’ still looms” (Jones 2013).

For countries like the United States, being dependent on China to supply rare earths can be especially risky, as the production of U.S defense weapon systems relies on HREEs, and China is reported to be the only country that can provide significant supplies of both light and heavy rare earths (Interview with Lifton by Weslosky 2015; Morrison & Tang 2012, p. 8-9)[189]. According to Hobart King, of Geology.com (2016), “[i]f a single country controls almost all of the production and makes a firm decision not to export, then the entire supply of a commodity can be quickly cut off. That is a dangerous situation when new sources of supply take so long to develop”. One might be reminded of the extent of this “dangerous situation” when recalling the maritime conflict that had allegedly occurred between China and Japan in September 2010[190]. It was reported that as a result of the conflict, China had taken action against Japan by suspending its rare earth shipments to the country (Bradsher 2010). This claim was denied by Chinese officials, but the event had nonetheless raised the eyebrows of country leaders around the world (Humphries 2013, p. 17). As

[189] “It is worth noting that the rare earth deposits in Inner Mongolia in northern China are mainly light rare earths. The more scarce and sought-after heavy rare earths are concentrated in southern China, especially in Jiangxi, Guangdong, Fujian, Guangxi, and Hunan provinces…Rare earths from the Mountain Pass mine in California and the Mount Weld mine in western Australia contain, predominantly, light rare earths” (Morrison p. 8-9).

[190] Refer to the following article entitled “Boat collisions spark Japan-China diplomatic row” (BBC 2010), which can be accessed via the following link: <http://www.bbc.co.uk/news/world-asia-pacific-11225522> [Accessed 17 July 2015].

Humphries (2013) explains, it "heightened the urgency among many buyers to seek diversity in its sources of rare earth materials" (p. 17).

Since the maritime conflict and export quotas incidents, countries and industries across the globe have been seeking new alternatives, and several attempts have been made to avoid dependence on China's supply of rare earths. Some of these attempts include exploring new deposits, starting new mining operations or reopening some of the closed mines, including California's Mountain Pass REE mine (Zepf & Reller 2012, p. 4-5)[191]. At the same time, the United States, Japan and the European Union (EU) took action by filing a World Trade Organization (WTO) complaint in 2012, accusing China of violating its free-trade obligations through its restrictive rare earth trade policies (Mining.com Editor 2012). The WTO launched an investigation on the matter, produced a report, and ruled in 2014 that China's export restrictions on rare earths and other raw materials are incompatible with its WTO obligations, and were thus deemed illegal (European Commission 2014). China responded to the ruling by lifting its export quotas in January 2015, but maintained its export tariff on rare earths (Maverick 2015; Mathew 2015). Nevertheless, mining experts and rare earth analysts argue that the WTO's ruling against China has not had any significant effect on its control of global rare earths supply as the country would still be able to apply restrictions through other means that could ultimately result in limiting export of rare earths to other countries: "Without a licence companies are banned

[191] Actions taken to mitigate dependence on China's rare earth supply, however, have been regarded as somewhat futile, as mentioned in Clapper's (2013) statement in the Worldwide Threat Assessment of the US Intelligence Community, "China's dominance and policies on pricing and exports are leading other countries to pursue mitigation strategies, but those strategies probably will have only limited impact within the next five years and will almost certainly not end Chinese REE dominance" (p. 11).

from exporting. Beijing still controls this vital bottleneck of the supply chain, therefore whether it caps exports at the port or controls the number of export licences issued, the result is the same: restricted supply of rare earths to the rest of the world" (Benchmark Mineral Intelligence 2015; Weslosky 2015).

Thus far in this chapter, the author has provided some background analysis and narrative on rare earths – their nature, their uses, and the prospective power seemingly delegated to countries and organisations that can succeed in extracting, refining, and applying them in ways to create value and profit. But how is all this information relevant to the Rare Earth Controversy that the author investigated in Malaysia? In the author's opinion, **examining and reflecting on the impacts and potential of rare earths on current technology, economy, environment, society, and the role of China in this whole scenario, is indeed a crucial step to better understanding the events that occurred in the selected unit of analysis under the case study of this research. Through conducting research on the Rare Earth Controversy, the author has learned that there are more dimensions to the story, and that they should be at the very least acknowledged, if not examined further**.

Certainly the situation that has been developing in the REE market and in China appear to have presented an opportunity for the world to consider searching for other alternatives to rare earths or to pursue the REE industry in strategic development plans. The latter is apparently the approach adopted in Malaysia. In fact, Datuk Fateh Chand, Chairman of the Academy of Science Malaysia's Task Force on Revitalising the Rare Earth Mineral Industry, states that "[t]he rare earths industry is strategic to Malaysia's aspiration to become a

high-income nation through the development of green, high technology industries" (ASM 2013, p. v).

6.4 MALAYSIA'S HISTORY WITH RARE EARTHS

In the process of researching the Rare Earth Controversy in Malaysia, the author discovered that the issue of rare earths and public fear of its environmental impacts were already present in the history of the country and in the hearts of (some of) its people. As previously mentioned, bastnasite, monazite and xenotime are the three major rare earth minerals from which REEs used today are mainly extracted. Monazite is the single most common rare earth mineral[192], and one of the several locations where monazite deposits can be found is in Malaysia (Humphries 2013, p. 9). But while bastnaesite, with deposits located in the United States and China, occurs as a primary mineral, monazite is found in primary deposits of other ores and typically recovered as a by-product (Ibid). Malaysia has historically produced xenotime and was an exporter of monazite in the early 1960s (British Geological Survey 2011, p. 28; ASM & The National Professors' Council 2011, p. x). Malaysia also used to be a major contributor in the global tin market and iron ore, hence at the time, REEs from monazite were extracted as by-products from *amang* or tin-tailings (ASM & The

[192] "Monazite, the single most common rare earth mineral, generally contains elevated levels of thorium. Thorium is accompanied by highly radioactive intermediate daughter products, particularly radium, which can accumulate during processing. Concern about radioactivity hazards has now largely eliminated monazite as a significant source of rare earths and focused attention on those few deposits where the REE occur in other, low-Th minerals, particularly bastnäsite." (Toovey 2010).

National Professors' Council 2011, p. x)[193]. Therefore, the country's REE production was closely related to alluvial tin mining (ASM 2013, p. 25). An event that occurred in the 1980s, however, exposed the Malaysian public to the term "rare earth" in an undeniably adverse manner.

6.4.1. *The Asian Rare Earth Case in Bukit Merah*

In 1979, a rare earth plant was built in Bukit Merah, Perak, which is situated in the north-west part of Peninsula Malaysia[194]. The plant was set up by Asian Rare Earth Sdn. Bhd. (ARE) as a joint venture with Mitsubishi Chemicals, a Japanese company, and functioned to extract rare earths from monazite[195] (Ichihara & Harding 1995, p. 1-2). The monazite was obtained from the *amang* that were found in abundance in the area of the Kinta Valley, where Bukit Merah is situated. The plant was opened in 1982 and also processed monazite that was imported from other countries such as Thailand, Indonesia and Australia. ARE's main rare earth product, Yttrium, was mostly exported to Japan, Canada and the

[193] According to the Academy of Sciences Malaysia (ASM) and the National Professors' Council (2011), "It was only in recent years that mining has taken a back seat to agriculture and manufacturing. Most of the country's expertise in mining either moved out into other sectors or joined the flourishing petroleum business. Any move to venture into rare earths would not be difficult since mining is not entirely alien to the country" (p. x).

[194] Some literature have suggested that the ARE's decision to operate the plant in Malaysia was linked to the implementation of strict environmental laws in Japan (Harding 1996, p. 238; Ichihara & Harding 1995, p. 3). As noted by Ichihara and Harding (1995), "Increased public attention to environmental issues in Japan, a consequence of a series of environmental and health tragedies caused by the malpractice of local mining and chemical companies in the 1960s, compelled the Japanese government to impose more stringent regulations for the protection of the environment and public health" (p. 3).

[195] According to Ichihara and Harding (1995), "ARE was formed with an initial investment of M$20 million by a Japanese concern, Mitsubishi Chemical and two Malaysian concerns, Beh Minerals and Tabung Haji. Despite the size of its investment, Mitsubishi clearly enjoys a position of leadership among the shareholders, and exclusively controls the management and operation of ARE, having ample experience and expertise in the handling of chemicals (p. 2).

United States, instead of being used in Malaysian manufactures (Ichihara & Harding 1995, p. 2).

The ARE plant was set up at a time when Malaysia's legal framework on the environment had been newly introduced and enforced. **Environmental impact assessments (EIAs) were not yet required then as part of the country's environmental laws** and the Radioactive Substances Act 1968 (RSA), which regulated the manufacturing of, dealing with, and use of, radioactive substances in Malaysia was in force (Furuoka & Lo 2005; Lye 2002, p. 665). This placed the ARE under the responsibility of the Ministry of Health: "It was revealed that from the outset of the operation up until 1985, ARE had carried out the operation, not under a permit for 'production', but under a permit for 'testing' issued under the Act by the Ministry of Health in July 1982" (Ichihara & Harding 1995, p. 3). The public was also not consulted (Ibid) and the plant was allowed to operate without a permanent or temporary waste depository[196].

In 1983, shortly after the ARE plant was set up, residents from villages in Papan and Bukit Merah, which are situated near Ipoh, became increasingly aware of the plant's operations and specifically the dumping of radioactive waste[197] that consisted of thorium hydroxide nearby their villages in 1984 (Harding & Azmi Sharom 2007, p. 138; Harding 1996, p. 238; Lye 2002, p. 665). They began to complain of the effects of the plant on their health: "the factory's stinging smoke and bad smell […] made them choke and cry…Their health

[196] This was arguably due to some local protests against the Government's decision to locate the radioactive dump site near the area of Parit, then followed by the Government's inability to swiftly decide on another suitable site (Lye 2002, p. 665; Furuoka & Lo 2005; Consumer Association of Penang 2013).
[197] "[R]adioactive waste […] had been dumped in plastic bags or in lumps into the pond at the back of the factory without any special precaution by ARE" (Ichihara & Harding 1995, p. 2).

began failing, indicated not only by frequent bouts of coughs and cold, but a sharp rise in the incidence of leukaemia, infant deaths, congenital disease and lead poisoning" (Consumer Association of Penang 2013).

Residents from several villages allegedly made efforts to communicate to the Federal Government about their concerns and desires to stop the plant's activities, but were reportedly told that the waste site being built in nearby Papan is safe and that the Government had taken precaution to ensure safety (Consumer Association of Penang 2013). They organized themselves into groups such as the Bukit Merah Action Committee and later the Perak Anti-Radioactive Committee (PARC) (Consumer Association of Penang 2013; Harding & Azmi Sharom 2007, p. 138).

In 1984, the RSA was repealed and replaced with the Atomic Energy Licensing Act 1984 (AELA). This led to the establishment of the Atomic Energy Licensing Board (AELB), which holds the authority to, among others, exercise control and supervision over the production, application and use of atomic energy and matters incidental thereto, license nuclear installations, ensure protection of workers, and regulate disposal of radioactive waste (Laws of Malaysia 1984a, Sections 8, 12, 25, 26; AELB 2014). In 1985, eight residents from Bukit Merah commenced a civil action in the Ipoh High Court, claiming that the plant's activities were harmful to their health as it was "producing radioactive dusts and gas that resulted in high incidence of leukemia among children, abnormal miscarriage rates among women, birth defects and a variety of other injuries" (Harding & Azmi Sharom 2007, p. 138; Furuoka & Lo 2005). The court granted an interlocutory injunction that restrained the plant from operating in an unsafe

manner. The Government had invited the International Atomic Energy Agency (IAEA) to inspect and review the Papan waste site, while residents invited various experts from the UK, US and Japan (Consumer Association of Penang 2013). The IAEA found the site to be unsafe while other experts declared it unsuitable for storing hazardous waste, and that it was poorly constructed (Consumer Association of Penang 2013; New Scientist 1986, p. 23[198]). In addition, Professor Sadao Ichikawa, a radiation and genetics expert, was reported to have found that radiation levels at the open field and pond next to the ARE factory were dangerously high and above the permissible level. Nevertheless, the ARE continued its operations on grounds that it had implemented the safety requirements set by the Government, and thus had complied with the injunction (Harding 1996, p. 239; Ichihara & Harding 1995, p. 4). Under the enforcement of the new 1984 Act, the AELB in 1985 ordered the ARE to suspend its operations until it obtained an operating license (Ichihara & Harding 1995, p. 4).

In 1987, the company was granted a one-year license by the AELB to operate the plant, which resulted in demonstrations by groups of villagers who continued to pursue the case in court (Ichihara & Harding 1995, p. 4). Between September 1987 until November 1990, the lengthy ARE case was heard and the court's judgment was finally delivered in July of 1992, after much delay, reportedly due to the great amount of technical evidence involved (Lye 2002, p. 665; Harding 1996, p. 239): "[T]he High Court at Ipoh granted a declaration and

[198] The IAEA recommended the stockpile of yttrium to be "eliminated immediately as the drums are not closed properly, they are not protected from rain and flood, and there is no protective shielding or exclusion zone for protection against external radiation" (New Scientist 1986, p. 23).

injunctions that restrained the factory from 'producing, storing, and keeping radioactive wastes on their land…in such a manner as to cause the escape of radioactive gases and wastes'; the order also imposed specific requirements for the storage of waste" (Harding 1996, p. 239).

The injunction, however, was lifted on appeal to the Supreme Court in 1993: "ARE was allowed to reopen the factory since, apparently, its operation had been considered by the Court as lawful and in compliance with regulations. It was also deemed that neither established facts nor scientific rationale has been produced to support the claims that the alleged health injuries of Bukit Merah residents were related to the operation of ARE" (Furuoka & Lo 2005). It was reported that the Supreme Court's judgment was mainly due to the treatment of expert evidence by the High Court Judge, and had rejected the approach of the High Court Judge on grounds that included Professor Kurosawa's readings, which had allegedly been taken over three years as opposed to one to three days, as in the case of ARE's expert's readings (Ichihara & Harding 1995).

Although the court had ruled to allow the company to operate, days later, Mitsubishi announced that they would close the factory and leave Malaysia (Lye 2002, p. 665; Harding 1996, p. 241)[199]. Ichihara and Harding (1995) notes that "[t]he appeal was presumably only proceeded with to save Mitsubishi's reputation and/or to secure an award of costs. It may well also have been material that ARE sustained considerable losses over the period of some 11 years since operations began. Those losses can of course partly be attributed to local opposition, in that

[199] A more detailed explanation on the reasons given by the Supreme Court for overturning the injunction can be referred to in Harding (1996), who opines that the ARE case "renders tort law practically useless in the context of development of environmental law and human rights in Malaysia" (p. 241).

the factory would not otherwise have had to close for some 15 months of that period" (p. 5).

The author observed that various sources of literature, media, and civil society groups have credited the shutdown of the plant to "people power" and the high court's decision to suspend the plant's operations, while industry players and rare earth experts have highlighted the company's decision to leave Malaysia as being mainly due to economic factors, including the growing market dominance of China (Ichihara & Harding 1995, p. 5; Lee 2012a; Interview with Lynas representatives, 30 Jan 2014; Interview with Nuclear Malaysia representatives, 10 March 2014; Interview with AELB representatives, 18 March 2014). Others have also mentioned that the company had been receiving mounting pressures from the Japanese public and Japanese Government, which were seen as an equally important contributing factor in the "image-conscious"[200] company's decision to cease operations in Malaysia (Lye 2002, p. 665; Furuoka & Lo 2005; Bradsher 2011b).

Since then, the ARE plant site was abandoned and reportedly left in bad condition: "Its metal structures and machineries have rusted, and the office block is in a state of near collapse. Security guards patrol the permanent dumping site and the public is denied access to the site" (Furuoka & Lo 2005). The radioactive waste was said to have been buried in a 10-meter-high wall of granite and rocks located in the outskirts of Papan. The property is now a permanent radioactive waste dumpsite and is still managed by ARE. However, the rights are reportedly

[200] According to Bradsher (2011), "Image-burnishing was important because the company is part of the Mitsubishi Group of Companies, which has long made Malaysia the cornerstone of its southeast Asian operations. The group has dominant positions in manufacturing a range of products, including air-conditioners and cars".

supposed to be transferred to the Perak state government in 2016 (Yong 2011)[201]. Expert officers from the AELB (and a scientific expert from Nuclear Malaysia) informed the author that the waste is located in a long-term storage facility (LTSF) at Bukit Keledang (Interview with AELB experts, 18 March 2014; Interview with Nuclear Malaysia expert, 10 March 2014). The AELB experts explained that as there were no laws on industrial control (to regulate industries involved in radiation and nuclear technology) in Malaysia during the 1980s, the AELB was established and so part of its job was to ensure that the ARE would clean up and dispose its waste properly. However, **the AELB experts also mentioned that while their intention in the case of ARE was to help in protecting the people and the environment, the storing of the waste in Bukit Keledang was perceived negatively by the local people, who felt that it proved the waste was indeed harmful to human health and that the Government had allowed such dangerous substances to be produced by the foreign company** (Interview, 18 March 2014). As mentioned by one of the AELB experts: "We [at the AELB] are actually more stringent because we are trying to avoid hazardous effluent discharging to the public. Instead they said it's because it's dangerous so that's why we put the strict requirement" (Interview, 18 March 2014). The experts further explained that the AELB enforces regulations

[201] Due to research limitations, the author did not manage to contact the Perak state government or other actors involved in this case, and did not investigate further to find out what would happen after the rights are transferred. However, the author did stumble upon a piece of information that appears to indicate that the Perak state government may be planning to mine rare earths in Bukit Merah. The source stated, "The Perak state government of Malaysia signed a Memorandum of Understanding (MoU) with Hong Kong-based Commerce Venture Manufacturing (CVM) Minerals for creating a joint venture to mine rare earth resources in Bukit Merah in 2011. In January 2014, Verde Resources announced to carry out exploration at the Merapoh Mine in Pahang whose sample study had indicated the existence of 15 rare earth oxides" (Mining Technology 2014). The author did not find Malaysian news coverage on this matter, which may reflect the lack of information shared and reported on this issue.

on radiation that follow international standards. While these international standards have changed over the years, the AELB continues to enforce the older (and thus more stringent) version of the standards, which it has adopted since the time it was established in the '80s (Interview, 18 March 2014).

In 2011, another one of Keith Bradsher's article in the New York Times (published on the same date as the article he wrote on the potential risks of the rare earth refinery in Kuantan) reported that Mitsubishi Chemicals had begun to quietly clean up the radioactive site in Bukit Merah, which is estimated to cost around $100 million (Bradsher 2011b). The company had also reached an out-of-court settlement with the residents by agreeing to donate $164,000 to schools in the area. However, Mitsubishi Chemicals continue to deny responsibility for the deterioration of health among the local residents (Bradsher 2011b). This was also noted by Furuoka and Lo (2005): "All the while, the company denied the accusations of wrongdoing, claiming the lack of scientific proof as to the harmful nature of its operations".

Indeed, there have not been any baseline studies conducted before the plant was constructed, and hence there is no scientific evidence that proves the plant had directly caused cancer among some of the residents in Bukit Merah (Interview with AELB experts, 18 March 2014; Butler 2012). Nevertheless, various studies on rare earths that have been conducted over the years have discovered that monazites generally contain higher levels of thorium and thus should require extra precaution during processing and waste disposal (Elsevier 2014). In fact, due to mounting concerns over radioactive hazards associated with monazites and because disposal of thorium is very costly**,** monazites have in

recent times been almost eliminated as a significant source of rare earth, while more attention has been placed on the few deposits in which REEs occur in other, low-Thorium minerals, such as Bastnasite (Humphries 2013, p. 9; Toovey 2010)[202]. Therefore, it is not impossible for the Mitsubishi Chemical's dumping of radioactive waste in areas nearby villages without proper construction of a disposal facility to have left some adverse and long-term effects on the environment as well as the health and wellbeing of the local residents. However, the author, as a non-expert in rare earths and due to lack of baseline information and further investigation into this matter, cannot conclude that the company had been the actual cause of the illnesses, as the residents had claimed. Still, **it is important to note Malaysia's experience with rare earths as it could have arguably implanted the image of suffering and injustice into the minds of Malaysians who still remember what had happened in the 1980s**. This is relevant to the research topic as it could display **how historical experience and perceptions of an environmental-related issue could stir people to participate in environmental decision-making, and force them to realise the importance of staying informed of as well as alert on the impacts of certain projects on the environment and thereby on their wellbeing**. As we will see in the next section, the case of Bukit Merah will be brought under the spotlight once again, this time in the protests against the construction of the rare earth refinery in Kuantan.

[202] Indeed, as mentioned in the earlier section, Basnasite is now the major mineral from which REEs are extracted and used in today's technologies.

6.5 THE RARE EARTH CONTROVERSY IN KUANTAN, PAHANG

As mentioned at the beginning of this chapter, a series of protests were initiated in 2011 by a group of residents in Kuantan, who were calling attention to the health and environmental consequences of a planned project on a specific area in Malaysia. The issue that sparked the protests was the construction of the Lynas Advanced Materials Plant (LAMP), which is a rare earth refinery that was being built at the time by Lynas Corporation Ltd (herein “Lynas Corp” or “Lynas”), near the South China Sea coast of Malaysia in Gebeng, Kuantan, the state capital of Pahang.

To provide a guided narrative of the events that took place in the controversy, and in order to critically analyse the main themes and issues identified in the case study, the author will dissect this section of the chapter into four parts. Each part will seek to address an aspect of the controversy, and will be outlined by some key questions so that the author’s discussion and findings can be traced back to the main objectives of each part, which are reflected through the key questions. **Part 1** will set the storyline regarding Lynas and its Advanced Materials Plant (LAMP) – Here the author intends to build an understanding of Lynas’ role in the rare earths market, what LAMP is, and why the company chose to construct it in Malaysia, as this was an aspect of the controversy that had been repeatedly questioned by some members of the public. **Part 2** will explore when and how the anti-Lynas protests began, and examine the concerns and demands that have been voiced by the protestors as well as the actions taken to express their discontent. **Part 3** will

delve into how the Government and Lynas responded to the public and situation, while in **Part 4**, the author will provide further analysis and other observations that have been made regarding the controversy in the context of the research topic. This analysis will also be used to evaluate the importance of access to environmental information and public participation in environmental decision-making in Malaysia.

6.5.1. *Part 1: Lynas and its Advanced Materials Plant*

Key questions:
What is Lynas and what is LAMP?
Why did Lynas choose to build LAMP in Malaysia?
Which Government body was involved in approval of the project?

Lynas Corp is an Australian mining company listed in the Australian Stock Exchange (ASX), and states that its strategy is "to create a reliable, fully integrated source of Rare Earths from mine through to market, and to become the benchmark for the security of supply and environmental standards in the global Rare Earths industry" (Lynas Corporation Ltd 2015).

The mining company owns an open pit mine in Mount Weld through its fully owned subsidiary Mount Weld Mining Pty Ltd. Mount Weld is located in Laverton, Western Australia and has the richest known deposit of rare earths in the world (Lynas Corporation Ltd 2015). Lynas representatives explained to the author that Mount Weld had naturally developed this rich characteristic from years of

weathering and geological changes in the mountain structure (Interview, 24 Feb 2014). The author's further investigation of these claims found that according to other experts, the Mount Weld deposit indeed occurs in the weathered layer (Voncken 2016, p. 28) and that the monazite at Mount Weld "is distinguished from that produced from other placers in Australia by having a very low thorium content, less than 0.3% ThO2, which is a highly desirable factor" (NPCS Board of Consultants & Engineers 2009, p. 12). This finding is in line with Lynas claims that the rare earth concentrates shipped from Australia to Malaysia contain low amounts of thorium and trace amounts of uranium (Interview with Lynas experts and engineers, 30 Jan 2014).

The REE mine owned by Lynas in Mount Weld was opened in 2011 and operated by a mining contractor, Roche Mining Pty Ltd (Latimer 2011; Lynas Corporation Ltd 2007, p. 3). Two kilometres from the mine site, the company's Mount Weld Concentration Plant, which was completed in 2011 as well, functions to crush and concentrate the mined lanthanide **ores** in order to produce the lanthanide **concentrate**. In 2005-2006, Lynas Corp underwent a project feasibility exercise in search of a location to build a processing plant that would refine these lanthanide concentrates through a series of processes, including cracking and leaching as well as solvent extraction (Environ Consulting Services 2008; Lynas Corporation Ltd 2012). This plant, which can also be referred to as a rare earth refinery, would be known as the **Lynas Advanced Materials Plant (LAMP)**, and was planned to become the biggest rare earth refinery to exist outside of China.

According to Datuk Mashal Ahmad, Managing Director of Lynas Malaysia (which is a wholly-owned subsidiary of Lynas Corporation Ltd[203]), the company had initially considered on setting up LAMP in Australia, and had received an approval from Australia's Department of the Environment to construct it in Perth's Meenar Industrial Park[204] (Interview, 30 Jan 2014). However, the need for large volumes of chemicals, water and energy meant that it would be costly to operate the refinery in Australia. Hence, Lynas Corp decided that Australia was no longer an economically feasible location to construct LAMP (Ibid).

The company then decided to build the plant in China, which already dominated the global REE market and would thus be able to easily offer all the necessary infrastructure, experience, and skilled workers at a lower cost[205]. Lynas had managed to acquire a permit to construct the plant in the city of Zibo, but China's decision to apply export quotas would have a considerable impact on how the company operates its business, as the price and amount of rare earth products allowed to export out of China would be very limited and strictly controlled by Chinese authorities (Interview with Ahmad, 30 Jan 2014). Lynas was therefore unable to set up its plant and operations in China, and hence had to reconsider other locations yet again. Several options were weighed, such as Abu Dhabi and Vietnam, but after reviewing some possible locations around the globe, it was decided that Malaysia had the most suitable environment for the

[203] According to the Lynas Preliminary EIA report, the company incorporated its Malaysian subsidiary in November 2006 "with the intention of investing and operating the plant in Malaysia" (Environ Consulting Services 2008, p. 1-1).
[204] As proof of this, a letter from the Minister for the Environment, Dr. Judy Edwards, was shown to the author.
[205] This was also explained by Lynas Corp's then Chief Executive Officer (CEO), Nicholas "Nick" Curtis through the following video: <https://www.youtube.com/watch?v=LjfYXqRqpIw> (Lynas Malaysia Videos 2011b) [Accessed on 10 May 2015]

plant i.e. industrial land and infrastructure located alongside other major chemical companies, easy access to sources of gas, water and electricity, convenient means of transportation, well-trained workforce in the chemical industry, and located not too far from Australia (Interview with Ahmad, 30 Jan 2014; Lynas Corporation Ltd 2012; Lynas Malaysia Videos 2011b).

When Lynas decided to explore the possibility of constructing LAMP in Malaysia, discussions that were held with the Malaysian Industrial Development Authority (MIDA) and other regulatory agencies identified a plot within the Teluk Kalong Industrial Area (TKIA) in Kemaman, Terengganu as an appropriate location to build LAMP (Interview with Lynas Malaysia representative, 30 Jan 2014; Interview with MOSTI representative, 18 Feb 2014; Environ Consulting Services (M) Sdn. Bhd. 2008). The location in TKIA was chosen as it was deemed most appropriate for LAMP and because other chemical companies were situated in the area as well. This arrangement would have been more convenient for Lynas to obtain the chemicals needed to operate its plant (Interview with Ahmad and other Lynas representatives, 30 Jan 2014). However, the State government of Terengganu had allegedly taken too much time to process the application (Interview with Ahmad, 30 Jan 2014; Interview with MOSTI representative, 18 Feb 2014; Interview with DOE officer, 21 Dec 2013). Due to such circumstance, Lynas had to consider searching for alternative locations. Kuantan's Gebeng Industrial Park (also known as the Gebeng Industrial Estate or GIE) was suggested as the next possible site in Malaysia, and Lynas agreed that it would be a suitable location to build and run LAMP as it is not too far from the Kuantan Port, which can provide ease of access for rare

earth concentrates to be shipped from Australia (Interview with Lynas representatives, 30 Jan 2014). After undergoing the approval process, LAMP was constructed in the Gebeng Industrial Park[206], and now shares the surrounding area with other plants that are mostly chemical or petrochemical[207] (Site visit, 30 Jan 2014; Interview with Lynas representatives, 30 Jan 2014; DOE officer, 21 Dec 2013; DOE senior officer, 16 Jan 2014). As part of the Pioneer Status programme[208], which offers incentives that serve to attract major foreign investment, Lynas was also granted with "pioneer status" that, among other incentives, includes a ten-year tax exemption. The author was informed by an officer from MOSTI and also from Lynas that the delay caused by the state Government of Terengganu's inability to reach a decision on the Lynas project, resulted in the company being offered an extra two years of tax exemption, thereby making it exempted from tax for a total of 12 years (Interview with MOSTI officer, 18 Feb 2014; Interview with Lynas representative, 30 Jan 2014).

On a visit to the LAMP site in Gebeng, the author was provided with an explanation of the operations of LAMP and shown samples of the three types of

---

[206] More information on Gebeng Industrial Estate (GIE) can be referred to here: <http://www.investinpahang.gov.my/index.php?ch=en_investinpahang&pg=en_industrialareas&ac=9> (Pahang State Development Corporation (PKNP) 2012).

[207] Lynas claims that most of the plants built in the Gebeng Industrial Park are monitored under CIMAH. CIMAH stands for Control of Industrial Major Accident Hazards. It is actually the abbreviation used to refer to the Occupational Safety And Health (Control of Industrial Major Accident Hazards) Regulations 1996. It serves to protect industry workers and people against particular hazards. It is regulated by the Department of Occupational Safety and Health (DOSH) under the Ministry of Human Resources Malaysia. Lynas explains that LAMP is not classified under CIMAH as it is not considered "hazardous enough" by CIMAH standards (Interview with Lynas representative, 30 Jan 2014).

[208] According to the Ministry of Finance and listed under the Promotion Of Investment Act 1986, the pioneer status (PS) that is granted to a company will allow it to, "enjoy different degree of tax exemption depending on the types of promoted products/activities" (Ministry of Finance Malaysia 2014; Laws of Malaysia 1986, Part II, Chapter 1). The types of products/activities are detailed in the Ministry's official website at the following link: <http://www.treasury.gov.my/index.php?option=com_content&view=article&id=704&Itemid=200&lang=en> (Ministry of Finance Malaysia 2014) [Accessed 4 June 2014].

residues it would generate, namely Water Leach Purification Residue (WLP), Flue Gas Desulphurisation Residue (FGD) and Neutralisation Underflow Residue (NUF)[209]. The rare earth experts at Lynas explained to the author that out of these three residues, only the WLP is considered radioactive in Malaysia (at about 6 Bq/g) as it goes above the radiation limits set by the AELB for the country, that is at 1 Bq/g (Site visit, 30 Jan 2014; Interview with Lynas representatives, 30 Jan 2014; ASM & The National Professors' Council 2011, p. 29). This is the reason why the AELB is involved in regulating Lynas. However, the author was informed that the AELB is not the only authoritative body that is responsible for monitoring the company's industrial activities in Malaysia. Lynas was required to obtain about twenty approvals and licenses (combined) before it was permitted to construct LAMP in the country (a list of licenses that was provided to the author by Lynas representatives can be referred to in the Appendix). In addition to the DOE and the AELB, several other Government bodies were involved in the review of LAMP before approval was granted to Lynas, such as the Department of Occupational Safety and Health (DOSH), the Department of Fisheries, and the Department of Drainage and Irrigation (Interview with Lynas, 30 Jan 2014; Interview with MOSTI officer, 18 Feb 2014; Interview with AELB experts, 18 March 2014; Interview with Nuclear Malaysia experts, 10 March 2014). Nevertheless, the DOE and AELB, along with the two Ministries of which they are attached to i.e. the Ministry of Natural Resource and Environment (NRE) and the Ministry of Science, Technology and Innovation

[209] Photos taken by the author of the sample residues can be referred to in the Appendix.

(MOSTI), respectively, appear to be the main Government authorities that have been placed under public scrutiny regarding the Lynas controversy[210].

The DOE was responsible for reviewing Lynas Corp's Preliminary Environmental Impact Assessment (EIA) report. A DOE senior officer informed the author that the EIA report was approved according to facts and data. He explained that in reviewing any EIA report, the DOE mainly seeks to define whether the impact of a proposed project would be significant or insignificant to the environment: "To determine the significance, we consider the magnitude of the impact, the risk and safety factors, and the presence of biological species in the area. If upon assessment, a project's impact were to be found insignificant, we may proceed to approve it" (Interview, 10 Jan 2014). In the case of Lynas, DOE provided its approval to the project based on the EIA and Quantitative Risk Assessment reports that were submitted[211]. However, due to the presence of low-level radioactivity in the rare earth concentrates that would be shipped from Mount Weld to Kuantan, an additional Radiological Impact Assessment (RIA) was also conducted (Interview with expert from Nuclear Malaysia, 10 March 2014). The RIA was carried out by experts at Nuclear Malaysia, a Government agency under MOSTI, as it was not under the purview of the DOE (Ibid). As

[210] The public pressure that has been placed on the two ministries, with further attention demanded from the AELB and the DOE, could most likely be due to the vital responsibility that these Government bodies hold for monitoring the wastewater discharge, air emissions and radioactive elements produced as a result of the plant's activities, which have all been the focus of public talk and speculation surrounding the general management of waste as well as by-products at LAMP.

[211] The EIA and QRA reports that was prepared on behalf of Lynas can be accessed through the following link, for further reference: <http://www.parlimen.gov.my/images/webuser/jkuasa%20lamp/Memorandum/Laporan%20Preliminary%20Environmental%20Impact%20Assessment%20(PEIA)/Preliminary%20Environmental%20Impact%20Assessment%20and%20Quantitative%20Risk%20Assessment.pdf> (Environ Consulting Services 2008) [Accessed 21 July 2014].

clarified by Dr. Gary Theseira from the Environment Management and Climate Change Division of the NRE, "the NRE and the DOE are not charged with regulating radioactive materials. These are under the purview of the [AELB]" (Interview, 29 Jan 2014).

Among other responsibilities, the AELB was in charge of approving Lynas' temporary operating license (TOL). Issued under the Radiation Protection (Licensing) Regulations 1986, a subsidiary legislation under the Atomic Energy Licensing Act 1984, the TOL enables Lynas Corp to "produce, process, purchase, possess, own, operate and store radioactive materials" (Teoh 2012). The TOL was to last for two years[212], but became conditional on Lynas' submission of a detailed plan for its radioactive waste disposal. In other words, the TOL would be granted for two years only after the conditions have been met. The thorium content that Lynas stated in the document is about 5.7-5.9 bq/g. As the author mentioned above, the AELB also explained that this is why it is regulating Lynas and also why the license is required (AELB 2012).

Therefore, the process of approval for LAMP underwent several stages and through various Government authorities. Sole approval of the EIA report did not mean that the company was immediately allowed to proceed with the project, as

[212] According to an independent online news source, Free Malaysia Today, the Class A license that deals with radioactive materials or facilities has four stages: site, construction, temporary operations and permanent operations (Teoh 2012). Lynas Corp was granted all stages of the Class A license except for a permanent operating license. The Class E license would allow Lynas to import raw materials from Australia to Malaysia, while the Class G license would be for storage before disposal. Director General of AELB, Raja Dato' Abdul Aziz bin Raja Adnan stated that the TOL was approved to give Lynas the opportunity to assess and confirm the declarations that it made regarding the safety parameters and to ensure Lynas corrects and makes improvements in respect to safety. The data collected during the TOL stage will be a basis for the next licensing stage, which will allow for a Full Operations License (FOL) to be issued. The news article can be referred to via the following link:
<http://www.freemalaysiatoday.com/category/nation/2012/04/04/no-tol-issued-aelb-says-it-again/>
[Accessed 17 May 2013].

other authorities were required to provide their approval, where needed, as well. There were, nevertheless, **existing deficits in public access to information and participation that the author identified in the approval process, which might have contributed to the anti-Lynas protests that ensued** (these deficits will be discussed further in Part 4).

6.5.2. *Part 2: Anti-Lynas Protests*

Key questions:

What instigated the protests and who were the protestors?

What were their reasons for being against Lynas and LAMP?

How did they express their concerns and to whom did they express them?

What actions did they take to address their discontent over LAMP?

Active protests against Lynas and LAMP were reported to have commenced in 2011, allegedly after an article published in the New York Times claimed that Malaysia was taking a risk[213] in allowing Lynas to construct its plant in Kuantan, Pahang (Bradsher 2011c). The article was also published online through NYTimes.com, which made it accessible to readers located around the world. It contained images of the construction works as well as a brief reporting

[213] The article by Keith Bradsher (2011c) states that "[f]or Malaysia and the world's most advanced technology companies, the plant is a gamble that the processing can be done safely enough to make the local environmental risks worth the promised global rewards".

of Malaysia's past experience with rare earths in Bukit Merah's ARE plant[214]. The article was linked to a few others that discussed different aspects of the same issue, such as the cleanup of the past ARE plant and the general environmental concerns that surround the rare earth industry (Bradsher 2011b). After the protests initiated, another article written by the same journalist and his colleague reported on the developing incident (Gooch & Bradsher 2012). It is unclear as to why or how a newspaper based in New York City (in the United States) decided to investigate the construction of this particular plant in Malaysia, but it nevertheless highlights an important point that in today's globalised and technologically-connected world, information on major actions taken, decisions made or events occurring in a country may no longer be contained within its borders. The fact is that the rest of the world is also observing, reporting, and discussing on various issues experienced in places located near to, as well as far from, where they are located. Therefore, **if the Government or local media does not make enough efforts to share information with the public on matters that might cause them anguish or concern, the people could still find out by referring to external sources, such as the international media**.

The protests initially drew participation from various groups of people in Malaysia, specifically those from Kuantan (Agence France-Presse (AFP) 2012; Teoh 2011), and "Save Malaysia Stop Lynas" (SMSL) emerged as the most prominent group to oppose the plant at the time. It was vocal in expressing opposition against LAMP, which it did so online and on the streets. Mr. Tan Bun

[214] The images can be viewed through a slideshow that NYTimes.com (Rahman Roslan 2011) has made available at the following link: http://www.nytimes.com/slideshow/2011/03/09/business/global/rare-slideshow.html> [Accessed 14 September 2013].

Teet was identified as the leader of this particular group, which he describes as a movement that is non-partisan and has no formal membership (Interview, 14 Nov 2014). Another group named *Himpunan Hijau*[215] ("Green Assembly") was formed shortly after, and is led by Mr. Wong Tack[216]. Although this group has since placed some of its focus on other causes, it has risen alongside SMSL to actively protest against Lynas[217]. Together, they form the two major groups that, at the time of writing (September 2015), still continue to express discontent on LAMP and Lynas. According to Mr. Tan, he first received information about Lynas and LAMP from his local Member of Parliament and the New York Times (Interview, 14 Nov 2014). He explained that residents in Kuantan were spurred to take action and vowed to stop the plant's operations due to earlier memories of the ARE plant and the (alleged) health problems it brought to the residents there (Ibid). When asked on whether he had visited the plant, Mr. Tan stated that the group's request to pay a visit did not receive any reply from Lynas and that the management has "until now never demonstrated any desire nor inclination to allow us to visit the plant" (Interview, 14 Nov 2014)[218].

[215] Himpunan Hijau (translated in English as "Green Assembly") began as an event that invited people to gather and march to Kuala Lumpur to oppose Lynas and the construction of LAMP. Soonafter, a group was formed and appeared to have adopted the name of the event.

[216] The author was unable to obtain further information on the origins of this group and its members, and attempts to approach them had failed due to no response/no reply.

[217] Further discussion on these two groups will be raised later in the chapter.

[218] The author found this statement to be contrary to Lynas' explanation and show of proof that it had responded to the group's request to visit. Representatives of Lynas claims that the company had welcomed the group to visit the plant, but the group had put forward eight conditions that Lynas needed to agree to comply with before the group would agree on visiting the plant. These conditions were communicated by the group's leader to a Lynas representative via an e-mail dated 20 October 2011 (Interview with Lynas representatives, 30 Jan 2014). The author was informed by Lynas representatives that initially it had no problems complying with all the group's requested conditions, which included allowing full video recording during the visit, taking photos in and around the plant, being allowed to walk around in all areas including those that are restricted, and to have about twenty members of the group joining the delegation, among others. The only problem Lynas had with the proposed conditions, as explained to the author, was that one of the conditions stated no press involvement would be allowed during the visit. The

The anti-Lynas groups' protests were carried out in various locations including Kuantan, Kuala Lumpur, Penang, Kota Kinabalu, Ipoh, and in Australia. The protesters utilised various symbols such as the black and yellow radiation warning sign (also known as trefoil), which became a part of their logo on T-shirts, badges, car stickers and picket signs, and other dramatic effects during their protests including black mock coffins, radiation protective suit costumes, mock voting campaigns, and placards with words that shout, among others, "Say No to Radiation", "Stop Lynas", "Go back to Australia", and "People before corporate greed" (Save Malaysia Stop Lynas (SMSL) 2011; SMSL 2012b; Associated Press 2012b). They also conducted marches and gatherings, and on one occasion, some groups of protesters crashed into an Australia Day celebration event, which was hosted by the Australian High Commission in Kuala Lumpur, to exhibit their discontent towards Lynas (Agence France-Presse (AFP) 2014b). Through ease of the Internet and social media, the anti-Lynas groups have connected with civil society groups and individuals in Australia, who have joined them in solidarity and are helping to extend their message to the Australian government, citizens, and the Lynas office in Sydney (Shut Down Lynas 2014).

The various concerns raised by the groups that protest against Lynas and LAMP is rooted in the issue of waste management, particularly with reference to the radioactive elements present in the rare earth concentrates that are sent to the plant for processing. As discussed earlier, rare earths are naturally found

representatives stated that they did not agree to that condition because they believed that members of the press should be allowed to join in and report on the visit if they wished to do so. Lynas representatives claimed that its refusal to comply with that condition is what led to the refusal of the group to visit the plant (Interview with Lynas representatives, 30 Jan 2014).

together with other elements, including thorium and uranium[219] (Long et al. 2010). Thus, the groups of protestors who expressed their discontent over the construction of LAMP initially argued that the operations of the plant, especially the waste it produces, would contaminate their environment. Similar to the fears experienced by Bukit Merah residents, the Kuantan protesters were afraid that LAMP would increase their risk of cancer through exposing them to radiation, which they believed could be spread in some form or another through air, soil and water[220]. They also claimed that the land in which the plant was built on is not a suitable location as it is prone to monsoon floods:

> "Here we are dealing with a world-scale rare earth plant at least ten times bigger than the one in Bukit Merah with hundreds more times hazardous waste. It has been built without any consultation with the public, with lax environmental safeguards and speedy approval processes. What more it is located in a swampy area so close to the sea and the population? *[sic]* We as informed citizens cannot simply sit back and do nothing" (SMSL 2012a).

[219] According to Long et al. (2010), "[t]he principal deleterious impurity in REE-bearing minerals is thorium, which imparts an unwanted radioactivity to the ores. Because radioactive materials are difficult to mine and handle safely, they are heavily regulated. When a radioactive waste product is produced, special disposal methods must be used. The cost of handling and disposing of radioactive material is a serious impediment to the economic extraction of the more radioactive REE-rich minerals, in particular monazite, which typically contains considerable amounts of thorium. In fact, imposition of tighter regulations on the use of radioactive minerals drove many sources of monazite out of the rare earth elements market during the 1980s".

[220] A video posted on Youtube.com explaining why Malaysians oppose LAMP can be viewed through the following link: <http://youtu.be/OjBEHUD_HvM> (GreenLeftTV 2012) [Accessed 18 August 2014].

The group has since expanded their concerns to include the vast amounts of chemicals utilised at LAMP, which they say could lead to toxic pollution of surrounding soil and water sources as well. The disgruntled group has also argued that one reason why Lynas intended to build LAMP in Malaysia was because Australia and Australians would not have accepted such a project. Their perception was that Australians had a more heightened level of environmental awareness, hence Malaysia was chosen by Lynas for its lax environmental standards, which Lynas took advantage of by exporting its industrial pollution to the country (Biasio 2014)[221].

Other than the issue of radioactive contamination, the anti-Lynas groups argue that nothing much was done to engage and inform the public regarding the construction of a plant that would be dealing with rare earths. They have also expressed dissatisfaction over the 12-year tax break granted to Lynas. Overall, the groups have claimed that regardless of the approvals and licenses that Lynas had managed to obtain from the authorities in order to set up and run the plant in Gebeng, it had not obtained a "social license" to operate (Interview with Tan Bun Teet, 14 Nov 2014). They have also collectively and individually made statements online and through the media that appear to indicate a lack of trust and confidence in the Government and foreign corporations like Lynas. Mr. Tan from SMSL believes the Government has been "tightly" controlling access to "all socially concerned information" and that the "sulit" (meaning "confidential") label

[221] An interview with Tan Bun Teet by Fabian Biasio shows Mr. Tan explaining his reasons for being against Lynas and LAMP. The video was uploaded on Vimeo by Fabian Biasio (2014) can be accessed through the following link: <https://vimeo.com/112395919> [Accessed 15 March 2015].

has been used by the Government to impose on any information, even though it may not be related to national security (Interview, 14 Nov 2014).

More arguments against LAMP were brought up by the protesters, however, this research was unable to analyse each and every one of them here in detail. This is due to the number and variety of complaints that have been aimed at the technical, economic, social, environmental and political aspects of the controversy, which would be too complex for the author to dissect, find sufficient evidence, and discuss the matters that were brought up, given the scope, timeframe and other limitations of this research. The author has instead highlighted the main concerns that have been raised by the actively vocal groups involved in the controversy, with more focus placed on the socio-environmental as well as governance dimensions of the series of events. The next part will contribute to exploring these dimensions further by delving into some aspects of how Lynas Corp and the Malaysian Government handled and responded to the controversial situation.

6.5.3. *Part 3: Responses to the Controversy by Lynas and the Government*

Key questions:

How did Lynas respond to Malaysian concerns regarding LAMP?

What was Lynas' reaction to the protestors?

What did the Government do to avoid escalation of social unrest?

Were their efforts helpful in calming down the public and coming up with solutions to resolve public issues with LAMP?

Nicolas "Nick" Curtis, then CEO of Lynas Corp, responded to the protests by stating that LAMP would be safe and was not comparable to the old ARE plant in Bukit Merah, as the company would not be processing rare earths from the monazite found in tin-tailings (Lynas Malaysia Videos 2011a). Other Lynas representatives, scientists, and academic experts have made similar statements and the information has been communicated by Government authorities to the public through mainstream media as well. In addition to obtaining clarification on this matter, which the author compiled from news sources and interviews with Lynas as well as other experts, the author's further research on the matter came upon information in literature regarding Mount Weld that states, "The Mount Weld deposit in Australia is a large and high grade one in which rare earths occur as secondary monazite. This is one of the few deposits in the world where monazite can be obtained as a principal exploitable mineral, instead of being a byproduct" (NPCS Board of Consultants & Engineers 2009, p. 12). As mentioned earlier in the chapter, the monazite from Mount Weld has been considered unique from

those of other placers in Australia, in that it is known to contain very low thorium content (less than 0.3% ThO2) (Ibid).

Lynas also responded by making attempts to inform the Malaysian public about rare earths and LAMP by releasing videos that displayed Mr. Curtis addressing questions on rare earths and some of the issues that have been brought up by concerned Malaysians. A Lynas representative explained to the author that the company's initial efforts to engage with the public when the controversy began, however, may not have been very effective in Malaysia as the approach that was taken came across as being somewhat too "professional" and distant, very "PR", which ultimately did not manage to get the intended message across to the people of Kuantan and the rest of Malaysia (Interview, 24 Feb 2014). The representative explained to the author that the Lynas public communications team in Malaysia took it upon themselves to step out and conduct personal, face-to-face interactions with the people. Being a part of the "99%" body of employees in Lynas Malaysia that are Malaysian, many of whom live and work in Kuantan, they did not want to be labelled negatively by the surrounding community, in which some of them are a part of (Interview, 24 Feb 2014). The team conducted their public engagement exercise, for instance, by approaching locals at the food stalls and "kedai kopi" (coffee shops, also known as "kopitiam", which are usually small and open-aired, serve inexpensive items on the menu, and are oftentimes family-run). These local establishments play a role in the social life of Malaysians, especially those in rural areas, as places where people can gather to eat, talk over coffee, and oftentimes gossip or discuss the latest news in politics. The Lynas representative reported that paying

a visit to such establishments, along with communicating with local newspaper journalists in person, appeared to have helped clear up misunderstandings amongst some groups of people in Kuantan (Interview, 24 Feb 2014). It was also helpful for some individuals, such as those who resided in the rural parts of Gebeng to be provided with a hypothetical explanation[222] of how LAMP works, instead of the scientific or technical version that could oftentimes be too difficult and complex for laymen to understand.

DOE representatives had also informed the author that the Department tried to provide the public with information concerning Lynas whenever people enquired, but had advised Lynas to engage with the public directly, and to keep them informed. This was because there was a concern that too many statements released by the Government concerning the LAMP project may begin to appear as though the authorities were defending Lynas, when it was not the intention nor within the scope of responsibility of the authorities to do so (Interview with DOE officer, 21 Dec 2013). Nevertheless, when the protests instigated public concern over the issues, several statements were released from the AELB, the DOE, and other Government authorities in order to provide requested information and clear up any misunderstandings. For example, **when the anti-Lynas groups argued that the company did not conduct a detailed EIA (DEIA) when its industrial activity involved rare earths with radioactive materials (which should have been regarded as an important matter that needed public feedback, given**

[222] As an example, the representative had to explain how one of the REE processing steps functions in the refining process to an old man with little educational background, by describing it as a cup of "milo" (which is a hot chocolate drink that is popular in Malaysia) with the froth on top that could be scooped up (Interview, 24 Feb 2014). He was referring to how the chemical process works in separating REEs from other materials.

the country's past history with the ARE controversy), the DOE explained that a DEIA was not legally required of Lynas. Indeed, at the time when Lynas submitted its EIA report, the List of Prescribed Activities Which Require DEIA, as displayed in the EIA Procedure and Requirements in Malaysia handbook (DOE 2007), had *not included* radioactive products, residue or waste. In fact, the mention of radioactive materials was only added to the list some time in 2011. A representative of the DOE explained to the media that companies wishing to set up plants that are similar to Lynas now would be legally required to conduct a detailed EIA, which would entail the project proponent to not only submit the same EIA report, but with an added requirement of public display for review and comments (Chooi 2012b). Lynas had also mentioned to the author that constructing the plant in an industrial park is another reason why it was not required to conduct a DEIA, as other chemical and petro-chemical companies were already located in the same area (Interview with Lynas representative, 30 Jan 2014).

In March 2012, the Malaysian House of Representatives appointed the Special Select Committee on Lynas Advanced Materials Plant (also known as the Parliamentary Select Committee or PSC). It was tasked with the responsibility "to study the issues that raised the concern of the public and the safety standard of the project". The Committee was given three-months to complete its report from the date of its establishment and submit "related recommendations to the House for approval or according to any orders from the House" (Parliament of Malaysia 2013). Four ministries were also tasked to address the Lynas concern – the Ministry of Trade (MITI), Ministry of Health

(MOH), Ministry of Science, Technology and Innovation (MOSTI), and Ministry of Natural Resources and Environment (NRE) (Interview with DOE officer, 21 Dec 2013; Interview with DOE senior officer, 16 Jan 2014; Interview with MOSTI senior officer, 18 Feb 2014; Interview with Nuclear Malaysia senior officer, 11 March 2014).

The AELB delayed its issuance of the TOL, which halted Lynas from commencing its refining operations at LAMP, and proceeded to invite the International Atomic Energy Agency (IAEA) as a third-party, independent assessor to the plant[223]. Another panel of international experts were also invited by the Government to come to Malaysia and provide their expert review of the site in Gebeng. The IAEA submitted a report of their findings with recommendations, one of which suggests Lynas to prepare a detailed plan for its radioactive waste storage in case it is unable to recycle the materials, while the delegation of international experts attended the Rare Earths Symposium that was organised by the ASM and moderated by an expert environmental engineer to share their knowledge on REEs as well as answer questions posed by the audience (Akademi Sains Malaysia & National Professors' Council 2012; Akademi Sains Malaysia (ASM) 2012a; ASM 2012b; ASM 2012c).

A few of the experts that attended the symposium, such as Jack Lifton (Founding Principal of Technology Metals Research and independent consultant, author and lecturer) and Professor Saleem Ali (Director of the Centre for Social Responsibility in Mining, University of Queensland) discussed their experience

[223] The International Atomic Energy Agency (IAEA) visited the plant and endorsed some of the safety procedures set out by Lynas Corp (Bradsher 2011a).

during the visit and what they thought of LAMP through various media sources. In an Australian radio interview, Professor Saleem Ali explained,

> "I reviewed […] the reports that were submitted by the activist community as well as the [IAEA], in addition to the site visit, and what I've concluded is that they're in compliance with all the obligations that were put before them. Malaysia has remarkably strict standards on radiation levels and exposure to the public because there was an incident some years ago…So the country is quite sensitive to these issues and the standards set before Lynas were quite high and as far as we can tell, including the IAEA report, they've complied with their obligations" (ABC Radio Australia 2013).

Meanwhile, Lifton contributed his opinion through an online article, in which he addressed the arguments that have been raised against LAMP by anti-Lynas protesters:

> "An environment activist group claimed first that the LAMP would release too much radioactivity, and would not be able to manage this waste. This argument has been overcome by multiple expert panels and site surveys and finally by the Malaysian courts and government, so the anti-Lynas group has now switched to the cry that the plant will emit toxic chemical wastes (as well as radioactive ones). This

> argument falls flat with regulators who have noted that the industrial park in which the LAMP is located, also has large operations of BASF, W.R. Grace, and Tennessee Eastman, all three of which process immense volumes of oil and organic chemicals to make plastics, organic intermediates, and pharmaceutical intermediates. A spill from anyone of those plants would be far more toxic than ANYTHING that could be leaked from the LAMP! Further the LAMP has triple-redundant spill control systems that are among the most impressive I have ever seen. I wonder if the LAMP's Global 1000 neighbors are held to the same standards?" (Lifton 2013).

With regard to the media, Lynas held press conferences to allow journalists to pose questions about LAMP for media reporting, and conducted scheduled visits to allow the media, members of the public in Kuantan, politicians, academics, students, and groups of interested individuals to tour the plant site (Interview with Lynas representatives, 30 Jan 2014). From the perspective of its role as a regulator, the AELB released a table that contained answers to frequently asked questions for media clarification on the Lynas issue that are within its purview. A compilation of all their questions is available for the public to download online through the AELB website. The AELB, DOE as well as MITI uploaded a "Lynas Pack" containing information for the public to refer to concerning LAMP on their official websites. In addition, Karam Singh Walia, who

is recognised in Malaysia for being an investigative reporter on environmental issues, attempted to provide more information on LAMP by visiting the site and conducting interviews with engineers and experts in Malaysia as well as Australia.

The information that was provided to the public, along with the expert reviews of the plant, scientific explanations, reports on LAMP, and increased media coverage on rare earths and LAMP did not manage to appease the groups of protesters, who continued to accuse the Government of being corrupted, and Lynas of telling lies. At the same time, the court hearings, its delays in reaching decisions, the IAEA and other expert visits, as well as the AELB's suspension in issuing the TOL forced Lynas to postpone its rare earths production at LAMP, which reportedly affected its economic performance and reputation in the market. In March 2012, Lynas issued a letter of demand to SMSL, and threatened to sue the group along with approximately 44 NGOs for endorsing SMSL's open letter that was published on an online news portal and addressed to the Malaysian Prime Minister (Malaysiakini 2012). Lynas claimed the open letter was defamatory, had caused injury to its reputation and goodwill, and that it demanded the letter to be removed from all media sources (Malaysiakini 2012; Lim 2012). SMSL refused to issue an apology, and so in the next month, Lynas Corp initiated its libel suit against SMSL (Tanquintic-Misa 2012). However, in July 2013, Lynas withdrew its libel suit before the proceedings commenced without stating its reasons for doing so (The Sun Daily 2013; Borneo Post Online 2013).

Therefore, as explained above, regardless of the company's claims of safety and the scientific assurance provided by expert assessors, **a show of distrust**

and dissatisfaction towards Lynas and the Government continued to be expressed by the groups opposing the plant (Fuziah Salleh on behalf of the Concern Citizens of Kuantan 2012). In the next part, the author will provide her in-depth analysis of the situation in relation to the research topic.

6.5.4. *Part 4: Observations & Analysis of the Controversy*

Key questions: *What can be learned from the* Rare Earth Controversy *in Kuantan with regard to access to information and public participation in environmental decision-making? Are there other factors that might have influenced the events that took place in the controversy?*

From investigating the series of events that occurred in the Rare Earth Controversy, **the author has observed the emergence of several recurring issues that may provide indications of the deficits that exist in Malaysian access to information and public participation in decision-making**. These issues are discussed as below.

6.5.4.1. ***Public Confusion***

The various conflicting arguments that were being presented by the protesters, Lynas, the Government, and local experts as well as foreign experts, may have contributed to public confusion, some of whom expressed their uncertainty regarding Lynas and LAMP. Several Malaysians with whom the

author engaged in casual conversation revealed that they did not fully understand the issue surrounding Lynas and LAMP, although they admitted to having heard the commotion through news sources and other media outlets, such as television and social media. When asked if they had made any efforts to seek out more information on the issue, one of the individuals, “Noorul”, said that although she was initially concerned, she did not take time to research more on the issue to understand the details of the event. She explained that she didn’t think it would affect her as the issue was taking place in Kuantan, while she was living in Kuala Lumpur (Interview, 28 November 2013). Another individual, “Johan”, who works with an environmental NGO, told the author that the details of the issue were too complex for him to understand as there were conflicting arguments on whether the plant was safe or not. He said that while he supports environmental causes and has changed some aspects of his lifestyle to become more environmentally responsible, he is also aware that rare earths are essential to green technology, and expressed that his smart phone is important for him to use in his work and daily life. Therefore, he stated that it is not the type of issue where one could simply boycott rare earths (Interview, 12 Feb 2014). Indeed, the author’s online survey results (conducted in 2013-2014) showed that 28.13% of the participants think that LAMP produces nuclear power while 21.88% said they didn’t know. This was perhaps due to the emphasis placed on the dangers of radioactive contamination, but could also be indicative of the lack of public engagement and information of the proposed project, coupled with spread of misinformation and fear-mongering tactics.

Some NGOs that were initially alert to what was happening in the controversy were later unable to decide on whether the issue was supposed to be one that they should be involved in. An NGO representative explained to the author that most environmental NGOs in Malaysia preferred to discuss matters of concern through dialogue with the Government, and would usually avoid protesting on the streets, unless it was very necessary and after all venues for expressing concerns had been exhausted. In addition, the representative told the author that it was also not easy to know who to trust, and whether the protests were truly carried out for the environment as the protests against Lynas had also displayed the involvement of politicians from Opposition parties (Interview with NGO representative, 12 Feb 2014).

Indeed, matters were made more confusing to the public when politicians from the ruling coalition and the opposition parties jumped into the controversy, expressing their personal opinions on LAMP, at times without truly understanding what rare earths are, or how the plant would process them and what kind of waste would be generated as a result. The situation appeared to worsen when Government officials made public statements that were deemed insensitive to the concerned anti-Lynas groups. An example of this was seen when a delegation of residents and environmentalists travelled to the national Parliament in Kuala Lumpur to publicly deliver a note to the Science, Technology and Innovation Minister, demanding for Lynas' TOL to be revoked as well as for the plant to be shut down. SMSL leader, Tan Bun Teet, who represented the delegation and was accompanied by the MP of Kuantan, Fuziah Salleh, met instead with the newly-appointed Deputy Minister of Science, Technology and Innovation, Abu

Bakar Mohamad Diah to pass on the note. One of the reports on the incident noted that when the delegation entered the Parliament, “it wasn't long before smiles and handshakes, degenerated into anger” (Arnott 2013). This was due to the comments made by the Deputy Minister, who stated, “I visited [the plant site] three weeks ago - it's similar to a soy sauce factory…I give my word that the factory is very, very safe [and] I would like to invite every one of you to come to Lynas anytime you like…I can provide you with buses, I can provide you with lunch” (Ibid). While his statement was perhaps intended to calm the crowd, it was not well constructed and instead created an opposite effect. His statement that compared the plant to a soy-sauce factory angered the anti-Lynas group as it appeared to downplay the seriousness of their concerns, and may have also caused surprise for Lynas, and it had not been consulted on the Deputy Minister’s plan to invite “everyone” at “anytime” to the plant.

The division in responsibilities between DOE and AELB, as well as MITI and the MOH appears to have also been cause for confusion among the public. The DOE, that is supposed to be the regulating authority on the environment, while in charge of monitoring the plant’s activities in terms of emissions and wastewater, is not involved in monitoring the radioactive aspects of the plant. This has posed some difficulties to members of the public, who did not know who to voice their concerns to – the Minister of MOSTI or the Director of the DOE? Who was in charge of or responsible for the LAMP project?

Hence, the lack of information, insensitive attitudes by some figures of authority and poor communication from Lynas and the Government to the Kuantan residents and Malaysian populace, were apparent in the case of the

Lynas controversy. The author does not seek to prove that these elements were the root cause of the controversy, but from the evidence that the author has relayed and discussed in this chapter, it appears that the scale of the situation was exacerbated by lack of public engagement, and deficits in access to information as well as public participation, which resulted in poor management and response to the protests. As Tan Bun Teet of SMSL mentioned to the author, **"Any projects that affects [*sic*] the nearby community should be adequately consulted. All relevant information should be made available for comments by experts the stakeholders engaged. Total transparency should be the order of the day"** (Interview, 14 Nov 2014).

The lack of information could also be translated into lack of comprehensible information, as many people in Kuantan still live in rural areas and are most likely not highly educated. Thus, **there is some indication that a lack of education and knowledge, especially in science and technology, could have also played a role in contributing to the scale of public confusion, anger and protests**. The author did not manage to delve deeper into this aspect of the protests and ensuing controversy, but it is a dimension that should be acknowledged as education could influence how people digest and respond to the information they receive.

6.5.4.2. *Influence of Local and International Events*

Based on the findings gained from literature, interviews, survey and personal interaction with various individuals, the author has identified a few key local and international events that could have likely influenced the intensity of the protests and "virality" of the controversy. The identification of these will help identify issues that need to be addressed in the development of recommendations for access to environmental information and public participation in environmental decision-making in Malaysia.

a. *The Bukit Merah Incident*

As mentioned earlier in the chapter, the past Rare Earth Controversy that involved the ARE plant in Bukit Merah was raised as a reminder to the Government during the anti-Lynas protests. Indeed, the author observed that links have been made by concerned members of the public and the media between the case of Lynas' LAMP and the ARE plant. When the issue was first voiced out by the protestors, the idea of rare earth processing and the potential risks involved in LAMP's activities were compared to the incident of the ARE plant at Bukit Merah, as well as stories on environmental degradation that had been reported to occur in China as a result of its rapidly growing rare earth industry. The Academy of Sciences Malaysia (ASM) admits that Malaysia's past experience with the ARE plant have had an impact on the way in which the Malaysian public perceives the rare earth's industry: "After the MAREC and ARE debacle, the negative perception of the RE industry has already been entrenched

in the minds of the general public. This became obvious when the government gave its conditional approval for the Lynas project in Pahang to proceed. Any presentation to highlight the positive impact of the RE industry would, as a result of the above, necessarily has to start from negative territory" (ASM 2013, p. 51). Gooch (2012) also mentions that "[e]nvironmentalists say as well that part of the reason why the Lynas plant has provoked such a divisive response is that Malaysians' experience of rare earth projects has been shaped by another refinery owned by Mitsubishi Chemical near the town of Bukit Merah". The SMSL leader had also claimed, as mentioned previously, that memories of ARE had spurred the citizens into action (Interview with Tan Bun Teet, 14 Nov 2014). Hence, there is no doubt that Malaysia's previous experience with a rare earth plant had left a lasting effect on the people's image and perception of rare earths. No matter the response provided by Lynas and the Government to clarify the issue, nor what experts have explained regarding the differences between the ARE and the Lynas plant, the notion of building another plant to process rare earths appears to be a very emotionally-charged and psychologically-sensitive issue, which authorities should have paid more attention to before making decisions based on technical aspects of the project.

b. *The Fukushima Daiichi Nuclear Meltdown*

The Fukushima Daiichi nuclear accident that occurred in the same year the New York times article was published (in 2011), may have further magnified public fears and concerns over the risks of nuclear plants, radiation, and

radioactive waste. When the issue first arose, the author remembered hearing "gossip" that surfaced around the community on the possibility of a nuclear plant being built in Kuantan. There were groups of people who initially thought that LAMP would be a nuclear plant, as reflected in the author's survey results. This displays that while access to information is essential in helping people be informed, it needs to be combined with public engagement in order to ensure effective understanding and digestion of the information received. It also displays that the Malaysian public have grown to be more aware of not only what is happening in the country but also globally, which further highlights **the local citizens' level of connectivity with the outside world as well as opportunities for gaining knowledge from other places without having to leave the comfort of their homes**.

c. *The 13th General Election in Malaysia*

The events that took place in the Rare Earth Controversy unraveled at a time when Malaysia's general elections were assumed to take place in 2013. Because of this, some opined that "[o]pposition parties have jumped on the Lynas refinery as an issue which could weaken support for the government. The campaign against it has been organized through the internet and social networking sites" (Head 2012). Kuantan's member of parliament (MP), Fuziah Salleh[224], claimed to have expressed her disagreement against the construction and operation of LAMP since 2008, and was arguably involved in opposing the

[224] Fuziah Salleh is also Vice President of an opposition party, Parti Keadilan Rakyat (People's Justice Party), which is part of the Pakatan Rakyat (PR) opposition coalition that contested against the ruling government in the 2013 General Elections.

planned project since then. Her official website explains this under a section dedicated to the controversy[225]. The section (entitled "Stop Lynas Rare Earth Refinery Campaign in Kuantan") recalls the MP's role in the creation of a group that was named "Concern Citizen of Kuantan", which eventually led to the formation of SMSL: "The anti-Lynas group led by Fuziah Salleh had gradually evolved into a bigger civil society group, i.e. 'Save Malaysia Stop Lynas' (SMSL)" (Fuziah Salleh 2014).

The website also explains that the group of "concerned citizens" had initially received little public support or media attention (Fuziah Salleh 2014). However, the Fukushima nuclear accident occurred on 11 March 2011, which was, by coincidence, shortly after the publication of the previously mentioned New York Times article by Bradsher (2011c) (on 9 March 2011). The MP's website goes on to state that the Fukushima incident contributed to increasing public fears, which consequently led to the rising popularity of the anti-Lynas campaign: "After fighting a solo battle for more than two years to stop the Lynas plant from being built in Malaysia *[sic]*. In early March 2011, public awareness has been heightened by the articles on the Lynas project published in the New York Times. At the same time, the Fukushima Daiichi nuclear disaster has ramped up fear in the Malaysian people about the risks of radioactive exposure. Since then, the 'Stop Lynas Rare Earth Refinery' campaign has started to gain momentum" (Fuziah Salleh 2014).

[225] This section of the website can be accessed through the following link: <http://fuziahsalleh.my/?page_id=999> [12 April 2013].

As the 13th General Election (GE-13) was approaching in 2013, the MP's involvement in the issue was declared by some groups of politicians and members of the public as being politically motivated[226]. Indeed, the issue of Lynas and LAMP became closely linked to political allegiance, and the author observed that much tension and accusatory remarks were being generated and thrown around online and offline, from all sides, as the public became divided between pro- and anti-Lynas. For example, the Opposition leader, Datuk Seri Anwar Ibrahim, reportedly attended the anti-Lynas protests in Kuantan and stated to the groups of protestors that LAMP would be shut down if the Opposition parties won the election: "Once we step foot into Putrajaya, we will cancel Lynas project!" (mediarakyat 2012; Woon 2013). In a later interview with an Australian news source, Sydney Morning Herald, the Opposition leader stated that if elected, he would make efforts for the plant's operations to be halted, while the public can be engaged in discussing their concerns over the issue. This would be done through what he describes as a "fast-track process" in the form of a public hearing, and if the plant were proven to be safe, he would allow it to continue operations (The Sydney Morning Herald 2013).

The descriptions provided in this sub-section demonstrate the politicisation of environmental issues in Malaysia. In this regard, perhaps **improving access to environmental information and providing better opportunities for the**

[226] An example of this opinion was expressed in a news article that cited a consultant physician from Pahang with interest in nuclear medicine and particle physics, Datuk Dr. Looi Hoong Wah, who expressed his views on what he perceives as "concerted lies" spread by the Opposition among local residents. The article reported that Dr Looi said the anti-Lynas campaign was "purely politically motivated to win votes in the coming general election" and that "activists had been brainwashing the people" (Bernama 2012). Refer to news article at the following link:
<http://www.thestar.com.my/news/nation/2012/11/05/prominent-kuantan-doctor-rubbishes-concerns-over-lynas-radioactivity/> [Accessed 17 July 2013].

public to participate in environmental decision-making could play a role in "democratising" politics surrounding environmental issues in the country.

d. *The Arab Spring*

The Arab Spring occurred in 2010-2011. Many discussions were raised on the role of social media that was used in mobilising the youths who participated in this event, which led to the eventual fall of a tyrant leader. It could be that perhaps the spirit and democratic ideologies spread from the Arab Spring had an impact on some members of the public in Malaysia. This could be seen in the tense political environment that ensued when this major event took place. There was speculation being spread around on how Malaysia could end up like the Arab Spring if the Government did not make changes to the way it governs the country. In response, the Government stated that members of the Opposition were trying to cause public unrest (Associated Press 2011).

Regardless of such speculations, the news coverage of the Arab Spring had transmitted images and video footage of street protests, uprising of the people, and human rights advocacy as well as calls for a more democratic form of governance. These could have arguably influenced the ways in which people across the globe, including those in Malaysia, think about and perceive the situation in their own countries and governments. There should thus be an appropriate platform made available for people to discuss their perceptions, and have a chance of listening to the opinions of others, not only as a way of deliberating on an issue of concern but to also dispel any damaging rumors, and

provide an opportunity for the Government to gain a better understanding of what people are actually concerned about when they see and/or hear instances of conflict and uprising occurring in other parts of the world.

e. *The "BERSIH" Rally*

The Coalition for Clean and Fair Elections *(Gabungan Pilihanraya Bersih dan Adil*), also known as "BERSIH", which translates into "clean" in the Malay language, is a major group that comprise of civil society organisations and political parties. According to its website, BERSIH makes demands for the Government to reform the electoral process (BERSIH 2014). It is largely known in Malaysia for its use of the color yellow of which participants are advised to display through the wearing of T-shirts, headbands, banners, etc. as a symbol of protest. Its big street rallies were conducted and participated by people from different ethnic groups and religions in Malaysia, many of whom were Malaysian youths who reportedly wanted to see improved changes in Malaysian governance and leadership. Himpunan Hijau has also been actively involved in the BERSIH rallies and events, as seen through pictures and reports in the media. BERSIH's street rallies could be linked to the Rare Earth Controversy, as it was an influential event that occurred most intensely during the election season. By attaching themselves to BERSIH's cause, the anti-Lynas protesters, on several occasions, managed to merge its small group into the larger groups of people and utilise the scale and popularity of the rallies to fight its own cause, but under the umbrella of BERSIH's demands (Chooi 2012a). Clearly, the BERSIH

rallies and the union of various civil society groups that come together to conduct peaceful protests on the streets show that there is an appetite for public participation in decision-making within Malaysia.

6.5.4.3. ***Distrust in Lynas Corp and Government Authorities***

It is perhaps not surprising for members of the public to react with hostility towards the notion of what they perceive as powerful, influential companies, especially foreign ones, that come into their country and use their resources to generate profit with what is perceived as a lack of care or concern for the people or the surrounding environment. The basis of their concerns and lack of trust might not be completely unfounded, as history has recorded examples of companies whose operations led to adverse impacts on the environment and health of the local communities, such as what was encountered in the infamous cases of Japan's Minamata Disaster (Harada 1995), India's Bhopal Disaster (Taylor 2014) and of course the Love Canal Tragedy that took place in the United States (Beck 1979). In 1992, the Economist published an article entitled "Let them eat pollution" that included an excerpt from a memorandum that was sent by then chief economist of the World Bank, Lawrence "Larry" Summers (who, at one point, was President of Harvard University) to his colleagues on 12 December 1981, encouraging the migration of dirty industries to least developed countries (LDCs) for economic reasons (The Economist 1992, p. 82). Hence, it is perhaps understandable why developing countries like Malaysia might be willing to sacrifice some amount of environmental quality, in order to develop the

economy, as the vision of becoming developed and richer tends to be closely related to notions of having better educational opportunities, more jobs, higher income, increased health, less street crime, higher world reputation, and overall socio-economic stability.

During the interview sessions, the author was informed by several participants that while the issue with Lynas can be related to levels of distrust towards such companies, an amount of distrust was also detected towards the enforcement authorities in the Government. This was made apparent in some of the statements that were posted online by the anti-Lynas groups. A nuclear expert told the author that **the ARE experience shows that engagement with the public is very important, that authorities need to be transparent, and they need to tell people that there is proof (scientific evidence) behind their actions, so that it doesn't seem as though authorities are hiding anything** (Interview with expert from Nuclear Malaysia, 10 March 2014). The expert also explained that in cases like these, **it would be better for the Government to maintain a level of distance from the company**: "The issue with Lynas is that the Government stepped in, and once the Government steps in, people feel that the Government is trying to protect this particular industry. It should be that neutral parties are engaged to come in and explain the matter to the public" (Ibid).

The author found, however, that there were conflicting views from Government authorities and Lynas in this regard. The representatives from the AELB made it clear that they do not function to promote any industry, that their role is only to act as regulators, that is to ensure that companies operating in the

country are complying with the laws that they are responsible for enforcing (Interview with experts from AELB, 18 March 2014). Hence, their approach (and that of MOSTI) was to place **responsibility on Lynas to engage with the public**, and to also clarify any misunderstandings (Ibid; Interview with MOSTI officer, 18 Feb 2014). However, when the author interviewed one of the Lynas representatives, she was told **that Lynas had followed and, on some occasions, reached beyond the requirements set by the Government,** therefore it is the Government that should step in and clarify the matter to the public, so that the public receives information from the regulating authorities, and so that the authorities could help to verify that Lynas was not lying by confirming the facts behind the statements made by Lynas (e.g. regarding the low-level radiation of its rare earth concentrates, the licenses it had applied for, the tax break it receives as part of the Pioneer programme, and so on) (Interview, 24 Feb 2014).

A lack of understanding on how the EIA process functions in Malaysia, together with the public participation deficits found in the Malaysian EIA system itself may have also contributed to the levels of distrust towards Lynas and Government authorities. This was seen in the example of the DOE's Schedule of Activities that require DEIA, in which "radioactive materials" were not included in the list (i.e. the item did not require public review and comment) at the time when Lynas project was being reviewed in 2008. The DEIA became one of the main items that the anti-Lynas groups demanded to see. They could not understand why a proposed rare earths plant (which they perceived as being extremely dangerous, due to the negative image

they had of the ARE plant), did not require a more “detailed” investigation by authorities. As a result, the absence of a DEIA procedure in the DOE’s initial inspection of the Lynas project was construed by the groups as a sign that corrupt activities had taken place between Lynas and Government authorities.

The author believes that while laypersons may not necessarily understand what an EIA is or the difference between the EIA and the DEIA in Malaysia, the negative history attached to the ARE case from the 1980s **should have raised a red flag to the decision-makers, who could have taken a more sensitive approach by engaging with the public to inform them of the planned project**. At the same time, Lynas Corp could have researched into the matter before choosing to construct the refinery in Malaysia. **The company might have been able to avoid the accusations by approaching local residents in advance to engage with them and provide information** on what the plant is and what it is not, in a language that they would be able to comprehend.

The DOE’s list was changed after the Rare Earth Controversy occurred, to include “radioactive materials”. The author is unsure of whether such changes were made as a direct result of the Rare Earth Controversy, or because such changes were already being planned by the DOE. The author’s uncertainty is due to the explanation that was received during the research data collection phase from a DOE officer, who stated that amendments to the EIA procedures has been planned for quite some time, and was in the process of being improved (Interview, 21 Dec 2013).

6.5.4.4. *Internet and Social Media as Main Source of Information*

Misrepresentation, insubstantial evidence and false speculation of information can be especially rampant online, where they are easily disseminated around the world at high speed. On the Internet, information can be "published" without being peer-reviewed and spread like a virus (hence the term "viral" video) to the point where it has potential to become a "hard fact", just as Zepf (2013) had mentioned, *because everybody says so*. There is no authority that exists online to police users that upload or post materials, which is what makes the Internet a great platform for people to express themselves freely or create dialogue on an issue that some may not be comfortable to discuss in public settings. However, it also means that people do not have to be held accountable for what they post online, and some lives have been deeply affected by online bullying, gossiping and hating, that are usually committed by users that hide behind anonymous usernames or avatars.

In addition, members of the public who can access the Internet may neither have the time nor the desire to take efforts in doing some research on the subject matter, or even to ensure that the source from which they are receiving information is credible. **This combination of reckless online publishing and indolent acceptance of information could also have detrimental consequences, and may have contributed to the escalation in public confusion, fear, and distrust in Lynas and Government authorities.**

When the controversy was being discussed in Malaysia, the author's research into the case for more information revealed that the Lynas Facebook page, at that time (2012-2013), existed but did not appear to be active – it did not

provide any information on LAMP nor the issues that were raised by the Kuantan residents, which the public could have referred to and shared in social media. Upon enquiring with a Lynas representative on this matter, the author was told that the company at the time had not expected to receive such a large scale of backlash from groups of people regarding LAMP, as it had complied with the country's legal requirements[227], was going to construct the plant in an industrial park in which other, more hazardous plants were located, and did not consider the low-level radioactivity of its concentrates to be of any issue (Interview, 24 Feb 2014). Hence, amidst the chaos that ensued and the enforced halts in production, the representative explained that the team at Lynas Malaysia simply did not consider it necessary to be present or active on social media. The author opines that it was indeed strange for the company to continue having a Facebook page, and yet remain mute online while groups of people who were enraged with the presence of Lynas in Malaysia, and concerned over the construction of LAMP, were vocally expressing their discontent on the issue all across the Internet.

The Lynas representative with whom the author spoke regarding the inactivity of the company's Facebook page provided his own opinion (i.e. not that of the company) on this matter. He stated that the public should be wise and responsible enough to judge for themselves what they see or read online, but said that perhaps the company did not think it was necessary for Lynas to be active on Facebook, as it was dealing with the matter offline and in person

[227] That said, it is one thing to comply with existing legal requirements, but it is another thing for certain legal requirements, such as with regard to public participation in the EIA process to be rather minimal compared to global standards.

(Interview, 24 Feb 2014). The author's survey, however, found that a **majority of participants do still turn to social media for information on the environment.** Therefore, it is evident that for some people these days, social media may be the main, if not only, source of information that they receive for news, events, and urgent issues of concern. The use of social media has indeed become increasingly more prominent in the day-to-day lives of Malaysians. A study found that Malaysian users on Facebook have an average of 233 "friends" on the social media platform, making them the "friendliest" in the world (The Realtime Report 2010)[228]. The anti-Lynas group, SMSL, uses its blog and social media, especially Facebook, to reach out to supporters and followers who are believed to be located around the globe. Mr. Tan also claims that the group has over 34,000 followers on its Facebook page, "Pahang Don't Need Hazardous Projects" (Interview with Tan Bun Teet, 14 Nov 2014).

As social media becomes more integrated into people's habits and daily activities, **it is also becoming more important for companies to maintain their online reputation**, as it is an extension of their image. In the case of Lynas, the silence of its Facebook page at a time when the protests were at its height gave a sense of disregard, as though the company was avoiding the accusations or choosing to ignore the concerns that were raised by the group. In addition, the inactivity resulted in failure to provide live information update from Lynas. According to Macnamara et al. (2012), "Failure to listen and respond appropriately in social media can result in damage to the organisation and be worse than not using social media at all. Becoming overwhelmed by or ignoring

[228] The role of social media in Malaysian lives will be further discussed in Chapters 7 and 8.

citizens' comments, questions and inquiries usually causes resentment and may lead to criticisms of the organisation online across multiple platforms and sites. Furthermore, heavy moderation (such as removing critical comments) can offend social media users who have high expectations in terms of freedom of expression" (p. 9). The Lynas employee acknowledged that, in retrospect, perhaps **the company could have engaged more proactively with the public beforehand to avoid speculation and misinformation from spreading the way it did online** (Interview, 24 Feb 2014).

The ways in which Government presents itself online could also affect people's level of trust. Pahlka (in Braiker 2012), for example, argue that in the United States, challenges still exist in how Government provide its services online: "You start to see why there's a lack of trust in government. Look at that simple and beautiful app and contrast it with a typical government website. We expect to be confused and frustrated by those government interfaces because they're generally not well done and do not implement design and usability principles".

6.6 CHAPTER SUMMARY

The author's exploration and analysis of the case study concerning the Rare Earth Controversy in Malaysia has revealed some insights into the deficits that currently exist in the country's public access to information and participation in environmental decision-making. Other than the direct links made between the issues that were raised in the case study with the research topic, this chapter has also inadvertently provided a glimpse into the socio-political changes that have been slowly but surely taking place in Malaysian society, especially in relation to cultural transformation, role of technology and social media, and concepts of democracy with particular emphasis on "people power".

Through the author's analysis of the case study, it would appear that the protest groups had valid reasons to be concerned, as Malaysia had previously experienced the operation of another rare earth refinery in the 1980s in Bukit Merah, which had caused much alarm and anger in the surrounding communities then. Nevertheless, through the author's further observations, interviews, surveys, and reviews of literature, news reports, online blog posts and other forms of social media on the issue of Lynas, there are indications that other influential factors may have been at play in the controversy that involved Lynas and its LAMP. Thus, it is essential to point out that the controversy did not solely highlight concerns over environmental issues, but also touched upon issues of transparency, corruption, education, poverty, and good governance. To some extent, it also seemed to test the Government's transformation agenda, highlighting the deficiencies that still exist in public engagement, availability of

information, and citizen participation in matters that may directly affect them. The Rare Earth Controversy was considered a politically sensitive issue that was strongly affiliated to discussions on the Government's capability to manage risks and the level of trust that a developing country like Malaysia should instill in foreign companies, which have been perceived as purveyors of both profit and pollution. Furthermore, the lack of public engagement, transparency and effective communication, together with the difficulties in accessing verified information, with some amount of misguided speculation and media misreporting, may have arguably led to more public confusion, fear, and frustration.

Indeed, the Government appears to have applied strict limits for radiation in Malaysia and have followed the procedures set out by the country's legal environmental framework. However, problems could still arise if the Malaysian public feel that they have not been well-informed or not effectively engaged with. In the case of Lynas, the author observed that the DOE had made efforts to follow the usual procedures and rules that it would normally do so with any company wishing to operate its plant in Malaysia, and Lynas had also done what it felt was sufficient to do in order for it to run its plant in Malaysia. Unfortunately, the case shows that due to the limitations in access to information and public participation, as well as the fragmented roles and responsibilities of authoritative bodies in the country, simply adhering to the minimum requirements was not enough for Lynas to set up its LAMP as it did not bode well with the residents of Kuantan. What is interesting is that the abovementioned deficits may not have been so obvious or demanded by Malaysian society in the past, but it now appears to become more essential, especially as Malaysians become more

connected to global issues, and are able to receive information from an incredibly diverse amount of sources in this era of Internet and smart devices.

The author believes that environmental laws and procedures in Malaysia need to be supported by better access to information and channels for effective communication of environmental concerns by the public to the Government. Malaysians arguably lack confidence in the implementation and enforcement of environmental laws and regulations in the country. Through the author's research, there are Malaysians that believe corruption persists, and that businesses hold more power and influence in decision-making processes that affect the environment. This is not entirely baseless as experiences from other countries such as Japan's Minamata Disaster (Harada 1995) and India's Bhopal Disaster (Taylor 2014), have shown that (chemical) companies driven by profit are willing to sacrifice the environment and well-being of communities for the sake of business, and may use all their political connections to get what they want.

From Malaysia's experience with the landslides of Cameron Highlands (The Sun Daily 2014) to the Bauxite mining issue that is still on-going in Kuantan (Head 2016), people have legitimate reasons behind conveying distrust in regulating authorities' ability to manage environmental risks. That said, the author would argue that public participation in environmental decision-making should be extended beyond formal procedures, and not limited to one-way communication styles. Citizens should be able to convey their concerns to the Government and interact in both formal and informal ways. Even if the outcomes of such deliberation do not lead to the best desired results for the environment or for the

interests of either parties involved in the conversation, the experience gained by both citizens and Government in the process can still contribute to changing the way the country deals with environmental decision-making, and can set the foundations for management of future environmental issues of concern. The author, therefore, opines that providing improved access to information and public participation is highly pertinent for any country that seeks to develop sustainably, foster innovation, rid itself of corruption, create a knowledge-based society, attract investment, and promote inclusive decision-making processes that represents the interests of all sectors of society while maintaining peace and unity.

CHAPTER 7

THE MAJOR FLOODS OF 2014/2015

7.1 INTRODUCTION

In December 2014, Malaysia experienced the worst series of floods it has ever faced in over thirty years (BBC 2014a). The state of Kelantan was the most badly affected among all the states involved as many people were evacuated from their homes, properties in the rural areas were destroyed, shops were inundated, and main roads were cut off by floodwaters, which meant that food supplies and road travel were very limited (Malay Mail Online 2014g). To make matters worse, rescue teams struggled to reach victims of the flood to save them, and the damage to electric substations and telecommunications infrastructure led to the disconnection of electricity in many areas, which further exacerbated the plight of the flood victims. Meanwhile, in the neighbouring state of Terengganu, the same flood had also inundated towns and villages, leading many to evacuate their homes and causing destruction to properties as well. One of Terengganu's districts, Kemaman, was considered the worst affected district (The Star 2014b). Nevertheless, the people of Kemaman underwent a slightly different experience with the management of floods in 2014, compared to the people from the districts of Kelantan, due in part to the flood preparation model that was implemented by local Government leaders (Dina Murad 2015).

In this chapter, the author will share her first-hand observation and experience of the floods in the State of Kelantan, which she was given the opportunity to visit at the time, and will investigate how the district of Kemaman engaged with its people to successfully[229] implement its flood preparation model. This chapter will serve to recount what the author witnessed during the floods, supplemented by the extensive news articles and videos published online by national and international sources that covered the disaster, and include the author's analysis of the key observations and identified challenges that emerged during the floods. This chapter will also discuss the importance of public engagement, as displayed through the implementation of the Kemaman flood preparedness model, with specific focus on how access to environmental information and effective participation functioned to help the district reduce disaster risks.

Indeed, the author (and other Malaysians) had not expected the arrival of a flood to occur at such a rare and unusual scale. Coincidentally, the floods took place at a time when the author was conducting part of the research in Malaysia. Upon observation of the events that unravelled, and the opportunity that was offered to visit the affected areas as well as meet with the flood victims, it was decided that the event of the Major Floods would be the focus of the second unit of analysis. The author believes that bringing to light certain aspects of the flooding event could be beneficial towards understanding the extent of public access to environmental information and participation practiced in the country,

[229] The model subsequently became Malaysia's gold standard for flood preparedness. The author will discuss this further in later parts of the chapter.

specifically in a particular area and circumstance. Analysing the issues that were raised by the public during the disaster could lead the author to further identify some of the deficits and barriers that is faced by the country on matters related to information and participation in environmental decision-making, which in this case was tested by the advent of a natural disaster. Pursuing this ad-hoc chapter could also allow the author to explore the research topic through a context and perspective that is different from those seen in the case of the Rare Earth Controversy. Finally, reporting her eyewitness accounts of the floods in Kelantan could provide valuable insights that may be useful for reference by future researchers.

This chapter will highlight the author's first-hand observations and experiential knowledge of the situation that occurred in Kelantan within the scope of the research topic. This is due to the opportunity that the author was given to visit the state, and because the author is more accustomed to the cultural nuances as well as unique dialect of Kelantan than to those of other states that were affected by the floods. A review and analysis of news articles that reported on the ways in which the flooding in Kemaman, Terengganu, was managed in addition to interviews and information gathered from other sources were conducted to learn more about how efforts made in that area may have contributed to saving lives and improving local governance of natural disaster. The analysis is supported by an examination of the model for flood preparation that was implemented in Kemaman. This chapter may thus provide an interesting comparison between two locations - Kota Bharu in Kelantan and Kemaman in Terengganu, which were both hit by the same wave of floods, but underwent

different experiences. The chapter will be divided into three parts – Part 1 will provide a brief background on the nature of floods in Malaysia, a description of the floods that occurred in 2014 as well as the Government's response to the situation. In Part 2, the author will delve deeper into the scenes of the flooding as she shares her experience in Kelantan and relays the scenarios that were witnessed there, while Part 3 will provide her description of Kemaman's elements of the district's newly implemented flood preparation model as well as how it made a difference to the ways in which people responded to the floods. In Part 4, the author will critically analyse the major floods within the context of the research topic by discussing several key aspects of the floods that the author has identified.

7.2 PART 1: FLOODS IN MALAYSIA

7.2.1. *The "Normal" and the "New Normal"*

Floods are not a newly occurring phenomenon in Malaysia. As a tropical country that experiences monsoon seasons every year, Malaysia receives heavy rainfall that is accompanied by strong winds and high tides, which can lead to flooding. MetMalaysia confirms that the "summer (June-July-August) and winter (November-December-January) monsoons greatly influence the rainfall over Malaysia" (Yik et al. 2012). The states that are located on the northeast coast of Malaysia, also known as "*pantai timur*" are often reported in the news as they experience serious flooding. One might assume that their location nearby the

South China Sea, the major rivers that flow through them and the monsoon rainfalls, winds, and tides that occur intensely in their areas are the culprit behind the series of major floods that took place in the east coast. Yet, with more frequent discussions and studies on the issues surrounding climate change and sustainable development, there have been emerging dialogues (Khor 2015) on how floods in Malaysia could also be caused or worsened by human and development activities: “Although the monsoons were once to be blamed for the annual occurrence of flood waters, today, Malaysia bears the bane of development and its uncharted consequences when excessive water paralyses communities and cause widespread destruction” (Zaharah Elias et al. 2013, p. 492).

The floods that occur in Malaysia annually result in damage to properties and loss of life, but Ngai Weng Chan (1997) explains that there is a notable difference between “normal” and “major” flood events:

> “Normal floods are seasonal floods which occur annually during the north-east monsoon season between November to March. During these floods, the waters do not normally exceed the stilt height of traditional Malay houses. Thus, people living in stilt houses in the rural areas on the east coast are well adapted to normal floods. It is the major floods, which are ‘unusual’ or ‘extreme’ events, that render them helpless...These floods are extensive, severe and unpredictable and result in significant loss of life, damage to crops, livestock, property and public infrastructure. In a major

> flood, people's coping mechanisms are totally ineffective and they rely on government relief for recovery" (Ngai 1997, p. 72-72).

However, due to the increasing occurrences of extreme weather that continues to be experienced in Malaysia, Martin Khor states the floods that occurred in the country in 2014-2015 should be treated as the "new normal": "If we treat the 'great floods' not as once-in-20-years or once-in-a-lifetime events, but as part of the 'new normal', then the plans for a better eco-system and for managing the disasters can be made more systematically, and a significant budget for regular financing can also be set aside" (Khor 2015). According to Khor, recent events of extreme weather, along with climate science indicate that the major floods of 2014 should not be regarded as one-off events, but as part a pattern linked to climate change that is being faced at national, regional and global levels. Therefore, Khor (2015) underlines the importance of learning from the lessons of the major floods to prepare for the future as such situations are expected to worsen over time.

7.2.2. *The Major Floods of 2014/2015: An Overview*

In December 2014, a series of floods hit Malaysian coasts and severely impacted the environment and the people who resided in the affected states[230] (Bernama 2014b; Bernama 2014h). The floods sent the country reeling in shock

[230] Click on the following link to view a video of Al-Jazeera's news coverage of the floods in Malaysia: <http://bcove.me/d2ro8tzn> [Accessed 20 June 2015].

as water levels increased at an alarming rate in a short period of time, prompting thousands of people to escape to higher ground and relief centres (Chin 2015; Agence France-Presse (AFP) 2014a). By the end of 2014, around 200,000 people were forced to evacuate their homes due to the severity of the situation, while several others lost family members in the tragic event (Koeck 2014). The floods affected the states on the east coast of Malaysia and also several on the west coast (FMT Reporters 2014).

However, the northern east coast state of Kelantan was the most badly affected, with over 100,000 flood victims displaced, and water levels that swelled rapidly, spilling into areas where, according to local eyewitnesses, floodwaters in the past had never reached before (Personal conversation with flood victims, 24 Dec 2014; BBC 2014a). Many wooden houses in the rural areas were destroyed and other buildings, including shop lots as well as gas stations, were submerged in beige waters, leaving only the tip of their roofs or signs visible: As described by a resident in Kuala Krai, one of the worst-affected districts in Kelantan, “I watched the flood swallow up my house with my own eyes that night. The water was like a huge wave. Furniture rose up, spinning in the rushing water. The water level was so high you could pluck the coconuts right from the boat” (TMI 2015c).

The main roads were cut off by floodwaters, which meant that food supplies and road travel were very limited (Razak Ahmad et al. 2014; Koeck 2014). To make circumstances worse, rescue teams struggled to reach victims of the flood due to the strong currents of the water that made it especially risky and difficult to control boats or enable helicopters to approach specific areas (Agence France-Presse (AFP) 2014c).



Figure 33: Wooden houses and surrounding area damaged by the floods.



Figure 34: A house completely destroyed by the flood was left with only a door standing.

The damage to and shutdown of electric substations and telecommunications infrastructure caused by the flood also led to the disconnection of electricity in many towns and villages across the state (Malay Mail Online 2014c; Malay Mail Online 2014h). This further exacerbated the plight of the flood victims, many of whom spent their nights in cold and complete darkness at the rescue centres, which were mostly set up at school buildings and public halls (Personal conversation with floods victim, 25 Dec 2015). The absence of electricity also posed a challenge to the rescue teams that were unable to locate and reach some of the flood victims, especially those living in the more secluded zones of rural Kelantan.



Figure 35: In thigh-high water levels on the streets of Kota Bharu, Kelantan, people were seen evacuating their homes with families and belongings.

7.2.3. *Malaysia's Response to the Disaster*

The Government's first response to the disaster when it occurred was more focused on saving the lives of the flood victims, which was mostly carried out through relevant government bodies such as the Malaysian Armed Forces (ATM), the Civil Defence Department (JPAM) and the People's Volunteer Corp (RELA) (Malay Mail Online 2014d; Author's observation, 24 Dec 2015). Efforts were also made to disseminate information on the floods and latest development of the situation through national radio and television stations (beritanasionalrtm rasmi 2014). Meanwhile, private television stations that initially stuck to their scheduled line-up of programmes, including coverage of the ten-year anniversary of the tsunami event that had occurred previously in the region, also began to follow up on reporting news of the floods as it worsened (Author's observation 23 Dec 2014; Astro Awani 2014). Additionally, live updates were broadcasted from the ground, and a few television channels began to run messages containing safety alerts, such as reminding people to keep children away from playing in the waters and to avoid consumption of contaminated water (Radio Television Malaysia (RTM) 2014). These efforts appeared to have provided the public with some form of access to information on the floods that were taking place in the affected areas.

The Government also ensured that flood emergency helplines were set up to exclusively address flood-related cases. These separate telephone numbers were introduced because the main emergency numbers could not be reached, due partly to the high influx of incoming calls and to the inundation of police and fire stations in the affected areas (Malay Mail Online 2014f). In a briefing on the

flood situation in Kelantan, the Minister of Communication and Multimedia, Ahmad Shabery Cheek, stated that it was essential to prepare telephone lines for flood-related emergencies as the main emergency lines needed to be maintained for other incidents that may not be related to the floods (Author's observation, 26 Dec 2014). The telephone numbers were disseminated to the people through television channels, radios, newspapers, and online. In relation to the research topic, this shows how important it is for the Government to provide the public with information that would be helpful in saving their lives in times of natural disaster.

As the situation worsened, the Prime Minister returned early from his holiday in the United States and proceeded to tour the affected areas (BBC 2014a). He then announced that the Government would provide extra funds to assist the flood victims (Agence France-Presse (AFP)/Reuters 2014). With the help of media coverage and "citizen journalism" through social media, the occurrence of the major floods also prompted various Malaysian NGOs, organisations, community groups and individuals across the country to raise funds, donate items, and volunteer for relief efforts (Global Voices 2015; Channel NewsAsia 2015; The Star 2014c). This is particularly insightful as it demonstrates the willingness of the Malaysian public to get involved and participate in activities that matter to them. It also shows that in today's era of digital technology, Internet access, and innovative mobile communication apps and devices, people can more easily connect to one another, receive urgent news from wherever they are located in the world, and organize themselves to take action in areas of concern. Getting access to information such as latest updates on the natural disaster or the Government's strategy to save their lives could be helpful in spurring the

public to offer aid and to volunteer to national efforts. Providing people with information that may include urgent updates on their environment may also lead people to help pass on the information to others who may not be aware of the important update. People could also use the information to help alert those who may live in areas that are more rural and less connected.

7.3 PART 2: THE STORY OF KELANTAN

7.3.1. *The "Water Festival": Culture of Floods in Kelantan*

In Kelantan[231], floods that occur during the monsoon seasons are generally regarded as "normal" and have become a part of Kelantanese life and culture (Personal conversation with Kelantanese residents, 26-27 Dec 2014). This is apparent in the ways of which people in Kelantan behave in times of flooding, and was explained to the author by Kelantanese locals. When the season of "normal" flooding arrives, a sense of festivity fills the air as schools are closed, and children play and dive in the waters surrounding their homes, while young adults wade through the waters on the streets to meet up with friends or relatives. The event is sometimes referred to in Malay as "*pesta air*" (or water

[231] Kelantan, which is located on the northeast coast of Peninsula Malaysia, shares its northern border with southern Thailand and is one of the poorest states in the country. The people of Kelantan live mostly in rural conditions and engage in agricultural as well as entrepreneurial activities. The majority of Kelantan's population are Malays, Muslim and young, and the Kelantanese are generally known in Malaysia to be people who are traditionally soft-spoken, laid-back, friendly and often smiling. The *Parti Islam SeMalaysia* or Pan-Malaysian Islamic Party (PAS) has governed the state since 1990. PAS is a political party that bases its ideology and practices on Islam. Widely regarded in Malaysia as a conservative party, PAS has expressed its plans to introduce and implement "Hudud" laws in Kelantan, despite strong opposition and criticism received by the Malaysian citizens and leaders who would prefer the country to remain moderate. This particular subject will be touched on again in the discussion regarding the floods.

festival) and indeed certain activities that are both recreational and entrepreneurial in nature are carried out in times of flooding (Ibid).

The author observed how people socially interacted in the waters during the major flood of 2014 that is now referred to as "Bah Kuning"[232], especially the groups of youth on motorcycles that were seen laughing and taking selfies on the inundated streets. Noticing their behaviours at a time when the nation was in mourning over the disaster that had befallen its fellow citizens, the author curiously enquired several Kelantanese locals regarding their perception of floods and the seemingly festive attitudes adopted by many of the people that the author witnessed. One person explained, "Those who are badly affected by the floods [in terms of damage to property or loss of a family member] are the ones who truly suffer in times like these. The rest that are not so badly affected continue to see the flood as a time to take a break and have fun in the water" (Personal conversation, 24 Dec 2014). At least three other individuals on separate occasions provided comments to the author that were similar to the above (Personal conversation with Kelantanese residents, 24-27 Dec 2014).

In being informed of their perception on floods, the author continued to observe how people coped with the disaster in some areas of the state's capital, Kota Bharu. Young children sat and played in murky waters in front of their homes or the shop lots owned by their parents, teenagers gathered in groups and roamed around on their motorcycles, some loitered and picnicked on the street dividers, while adults were mostly seen moving furniture and belongings to

[232] "Bah Kuning" is Kelantanese slang meaning "Yellow Flood", due to the light brown/yellow-ish colour of the flood waters. This is in contrast to the last major flood that occurred back in 1926, which is still referred to as "Bah Merah" or "Red Flood", because of the red hue of the waters.

higher ground, or attempting to operate their businesses despite the rising waters. A little child who spotted the author in dry clothes asked if she had taken a dip in the water yet. Encouraged by the adults, a group of children proceeded to invite the author to join in on the “fun”, as though bathing in flood waters was the most natural thing to do in such a situation. In addition to these recreational activities that have been associated with floods in Kelantan, the author also detected a sense of nostalgia among many of the older generations of Kelantanese locals as they shared stories on what it was like to grow up experiencing floods. It occurred to the author that given the long history of floods in Kelantan, it is possible for the people’s cultural identity to be attached to such an event as it played an important role in the interactions they have had with their environment and community.



Figure 36: A young child was spotted playing in murky floodwaters in front of a partially-inundated shop in Kelantan.

That said, in considering the devastating impacts of floods, the descriptions of the author's limited observations above are not intended to portray the natural disaster as an event that the people of Kelantan look forward to experiencing, or to downplay the tragic loss and suffering that parts of the population endure each time a flood hits the state. Instead, they are meant to provide a general picture of how floods in Kelantan have been integrated as a norm in the lives of the people, so much so that swimming and splashing in flood waters surrounding one's home is as "normal" to the Kelantanese as throwing snow balls and making snow angels are to New Yorkers in Central Park after a heavy snow blizzard. It seems

that the annual occurrence of floods have a significant role in shaping the lives and culture of the Kelantanese (and likely for residents of other east coast states in Malaysia as well), which could be helpful in understanding how environmental changes like natural disasters could influence people's culture, and consequently how they may respond to information received on their environment.

7.3.2. *Reactions to "Bah Kuning" & Other Observed Scenes*

The severity of "Bah Kuning" was unexpected by the people of Kelantan (Personal conversation with flood victims, 25-26 Dec 2014). Several Kelantanese locals informed the author that they were surprised at how quickly the water level rose, indicating that they had not been prepared for the major flood that arrived (Ibid). A woman who was spotted on the inundated streets exclaimed to the author that she had tried to remain at home when the floodwater was still shallow, but became more concerned when she realised that it had risen to waist-level overnight. At the time of meeting, the woman said the water had already filled her home to neck-level, and so she finally decided to move to a relative's house situated on higher ground. Like many of her fellow Kelantanese, the woman was unable to gauge the severity of this "rare" flood and thus responded to rising water levels based on her prior experience (Ibid).

While the woman did eventually leave her sinking home, the author received news that some residents had completely refused to leave their property, opting instead to climb onto the roof or stay in their inundated homes, in hopes that the flood would soon subside (Malay Mail Online 2014a). Deputy Chairman of the

Malaysian Red Crescent Society Kelantan chapter, Dr. Seri Buana Zainudin, blamed their behavior on “stubbornness born out of ignorance”, explaining that “[w]hile most people were scared by this extraordinary flood and looked for higher ground, some chose to believe it was a freak occurrence which would only last a short while” (Ibid). Such actions posed great challenges to the rescue teams who were making efforts to save the flood victims and transport them to relief centres. Their attitudes could be due to a lack of awareness or as Dr. Seri pointed out, “ignorance”, on the severity of the flood, which could be rooted in a lack of education (Ibid). Kelantan is, after all, one of the poorest states in Malaysia, with a majority of its population living in rural conditions.

The doctor also mentioned that the “stubborn people” did not only lack an understanding of the severity of the situation, but were also not aware of the consequences of the floods with regard to hygiene: “It is a very Kelantanese culture to keep smiling, even during hard times. But we must not forget the water on the streets is not clean and is definitely not consumable” (Malay Mail Online 2014a). As the author had mentioned earlier, children were seen playing in the floodwaters without contemplating the possible spread of waterborne diseases (Author’s observation, 26 Dec 2014). It is, therefore, vital to address the lack of education on and sensitivity to environmental issues as well as the cultural aspects that are attached to such lack of awareness when seeking to improve or establish policies and programmes concerning access to information as well as public participation in environmental decision-making. For example, if the majority of people in a certain community does not understand why the environment should be kept clean or protected, and are unaware of the diseases

caused by the dumping of waste or irresponsible industrial activities, as well as the spread of these diseases during times of floods, it would be difficult for Government authorities to get warning messages across to tell people to keep children away from the waters.



Figure 37: In Kuala Krai, Kelantan, one of the worst areas hit by the flood, this woman was spotted washing dishes in murky flood waters amongst her destroyed belongings. The author was informed that in the absence of clean water, some people in the rural areas would turn to using floodwaters to bathe and even to cook rice. This was a great concern to authorities and health experts as doing so puts them at risk of waterborne and other infectious diseases.

The lack of knowledge and awareness was also apparent through the limited understanding that some people held regarding the complexities involved in the process of rescuing flood victims. As an example, when visiting one of the flood relief centres, the author encountered a few locals who complained that it had taken too long for the rescue team to save them. Their assumption was that the responsible Government agencies should have arrived quickly with boats and

helicopters to save them from the rising waters, but had instead taken a long time to respond to their dire situation (Personal conversation with flood victims, 27 Dec 2014). In addition, some people were not happy with the treatment they were receiving at the relief centres. Farhana Suhada expressed her dissatisfaction to a news reporter by stating, “I am angry with them [the government]. We don’t care about their politics. We just want the government to do what they should do and help us…For breakfast I had three biscuits and tea. There’s not enough water and no food at all for my baby. I had to buy my own milk” (Agence France-Presse (AFP) 2014a). BBC News coverage of the floods that the author accessed through Youtube.com, reported that some people had decided to take matters into their own hands by doing what they can to help their fellow Kelantanese. Again, the author noticed that some victims mentioned how they had been stranded for days without any help from anyone, emphasizing the absence of Government help. Hakim Harun, who the reporter interviewed during his quest to deliver food, medicine and other supplies to flood victims mentioned, “Nobody come [*sic*] and check, nobody from the authorities, nobody from the government” (BBC News 2015).

It becomes evermore important, therefore, for the Government to engage with the people even before floods occur, to help explain to them what actions are being taken when floods do happen, and why it can sometimes take more time than expected for rescue teams to reach the location of flood victims. Of course, while it would require more serious coordinated efforts from the Government at both local and federal level to implement effective solutions in preparation for natural disasters, and to increase their likelihood of saving lives,

the act of keeping people informed beforehand as well as inviting them to participate in formulating flood preparedness solutions, may help allay public assumptions of neglect or abandonment by the Government in times of disaster.

Nevertheless, the Government was indeed not technically prepared to handle the major flood when it arrived – Before the setup of flood lines, it was difficult for people to reach through the emergency lines due to the influx of calls. The MERS 999 emergency line[233] was jammed with calls as it received all sorts of cases of emergency (Personal conversation with senior civil servant, 25 Dec 2014). The strong winds and rapid currents of the water played a major role in slowing down the rescue operation and in addition, there was a lack of human resources in the poor State, thus many members of the rescue teams were deployed from other States, which meant that it took more time for them to get themselves accustomed to the terrain and layout of the area[234]. As explained by Dr. Nik, one of the army doctors who were involved in the rescue efforts, "[a] lot of our vehicles broke down trying to get into the flooded villages. The communication network was unstable. No one expected the situation would be this bad" (TMI 2015b). Dr. Nik's statements display that in times of natural disaster, rescue operations can be hampered due to various factors that may not

[233] MERS 999 is short for Malaysian Emergency Response Services. According to its website, "MERS 999 is an integrated emergency response system managed by [Telekom Malaysia]. The MERS 999 project consolidates five emergency service providers – PDRM, JBPM, KKM, JPAM and APMM under one common ICT platform to provide uniform and consistent process in handling emergency calls. MERS 999 enables the 999 number to function as the sole emergency number for all emergency services". However, this service was not set up to deal with natural disasters specifically, but for emergencies in general. More information is available through the following links:
<https://www.tm.com.my/AboutTM/NewsRelease/Pages/MERS999Launched.aspx> and
<http://www.999.gov.my/> (MERS 999 2015) [Accessed 25 April 2015].

[234] That said, the environmental surroundings changed drastically during the disaster, hence it may have still been difficult for the rescue team to reach the flood victims had the group been comprised of locals who knew their way around the villages.

be within the control of authorities and made worse with the breakdown of communication. However, in the midst of such chaos, people might not understand what those factors are, and may blame the authorities for not caring or attending to their needs.

The doctor's experience also shows that communication and having the capability to access as well as share up-to-date information is vital in times of disaster, not only for the people to feel informed, but also for decision-makers to respond efficiently to the people's needs. The International Federation of Red Cross and Red Crescent Societies highlights the potential for a **lack of information to lead to uninformed decisions**: "The most difficult period of a disaster is in the immediate aftermath. During this period, humanitarian action needs to be prompt and targeted, and taking the right decisions can make the difference between life and death. Yet it is during these times that decision-makers frequently have to make uninformed decisions, most often due to lack of available information about the situation at hand" (International Federation of Red Cross and Red Crescent Societies (IFRC) 2013, p. 15). In the case of the floods in Kelantan, Hakim Harun who was interviewed by a BBC reporter stated that the flood coordination centre he called informed him that the place where he wanted to deliver supplies to flood victims was inaccessible. Yet, he managed to get through to the location: "They said the bridge is still closed and as you can see just now when we take [*sic*] you guys, it's not closed, it's accessible. So this information, even the people at the centre, the coordination centre, is not aware of" (BBC News 2015). Access to information, therefore, is arguably as important to the authorities as it is to the flood victims.

While Shanthi Kalathil (2008) agrees that communication is absolutely vital in the wake of natural disasters, she argues that unfortunately, “in many countries around the world, governments clamp down on information in the wake of natural disasters or other incidents, particularly under circumstances in which they feel any ‘leak’ might be harmful to the country's image, or when they feel the freer circulation of information may lead to unacceptable social and political consequences for the government in question. In these situations, an already difficult situation for the survivors becomes even worse: people are cut off from each other and from the outside world, with rumor displacing reliable information as the basis for life-and-death decisions” (Kalathil 2008). The author did not happen to detect any indication of secretive activities taking place during such chaotic times in Kelantan, and no credible reports have surfaced regarding this matter, thus it cannot be confirmed whether any vital information was kept from being “leaked” to the public during the floods. Nevertheless, the author observed that the disconnection of electricity in various areas in Kelantan had aggravated the people’s situation further as it resulted in the temporary cut off of information and communications. All of a sudden, there were no more access to radio or television; within a few hours, mobile phones had run out of battery; and for the next few days, no newspapers were made available (Author’s observation, 24-28 Dec 2014).

In the absence of energy and technology, many people in Kelantan lost their access to information, and were practically isolated from the world, while the rest of the nation was still receiving updated news on the flood situation from local and international media (Ibid). The author, who was still in Kelantan when the

electricity was cut off, experienced the urgency of the situation and witnessed the importance of being connected, especially when the floodwaters were still rising at the time. Some of the flood victims had family members who were located elsewhere in the country or overseas, and were thus dependent on forms of mass media to keep each other updated on the flooding situation, or to search for loved ones who had been separated by the strong currents of the flood. Whatever their circumstance, the absence of electricity that prevented them from charging their mobile phones and accessing the Internet, was frightening for both the victims and distanced families[235]. Each night that was passed in darkness signified another day of being uninformed of what was going on, how others were coping, what the Government was planning to do and when was the unfortunate event expected to pass.

At one of the relief centres, the author was approached by several older women, who enquired on what was happening in other parts of the flood-hit areas. They told the author that they felt as though they were being kept in the dark because there were no newspapers to refer to, or electricity to power the radios and television, so they were not able to listen to what was taking place beyond the waters. The author detected their urgent need for information, and it became evident that having newspapers to read would have also provided them with some form of comfort in times of crisis, in addition to the supply of food and

[235] Such as what was experienced by Saadiah Mat Husain who was away from her Kelantanese hometown during the floods, and was anxious to know what was happening to her parents and mother-in-law after communications were severed. She was reported to have said "As of now, I am relying on social media for information. I would cry all day thinking about this" (Rahmah Ghazali 2014). The news report covering her story can be read through the following link:
<http://www.thestar.com.my/News/Nation/2014/12/28/Floods-Anxious-relatives/>
[Accessed 12 April 2015].

other basic necessities. Through her experience with the flood victims, the author witnessed the practical difference it made for people to be able to gain access to information on their environment during such a disastrous event – not only to furnish oneself with knowledge of the situation, but also to feel secure (such as in knowing that help is on the way), to know what to expect (such as where to go if the flood gets worse), and to be empowered (for instance by learning of others' survival stories and finding the strength to comfort oneself in tough times).

The author witnessed towns and villages across Kelantan blanketed in pitch-black darkness, and could imagine how alone and isolated some people must have felt in being completely disconnected. Before the disconnection of electricity, the scenarios of the flood in Kelantan were vastly captured and shared by locals and foreigners through texts, images and videos on social media (BBC News 2014). This illustrates the rising prominence of social media in Malaysia's evolving culture, and was used by many people to send and receive information in times of natural disaster so that their voices could be heard, their stories told[236]. A local news article reported on how social media provided extensive coverage of the disaster, and pointed out that some people were able to act on their own to help those in need, instead of depending on Government aid to arrive due to the latest information that they were receiving via social media connections:

[236] The author discovered that many people used social media and mobile apps such as Whatsapp to keep each other informed of the flood situation, and also to request for help on behalf of groups that were poor and severely affected. Examples of online posts through Instagram and Twitter as well as hashtags that were used such as #mybanjir, #PrayForPantaiTimur and #PrayForKelantan can be viewed through the following article by Global Voices: <http://globalvoicesonline.org/2014/12/27/more-than-120000-evacuated-as-malaysia-hit-by-worst-flooding-in-decades/> [Accessed 12 July 2015] and by TMI (2014b): <https://sg.news.yahoo.com/kelantan-flood-victims-plead-aid-via-social-media-023736443.html> [Accessed 17 July 2015].

> "Even before the authorities realised the full extent of what was initially regarded as 'just another annual flood', residents in Kelantan, Terengganu and Pahang as well as other states were sending up-to-the minute reports on the water levels, conditions of their homes and updates on which roads were no longer accessible via their Facebook and Twitter accounts…It was no surprise that netizens were the ones who knew first how desperate the situation really was and started organising efforts to send supplies to the victims, and even got together groups to head out to see what they could do to help" (Chi 2015).

While social media was useful for flood victims to share their experiences and "report" the situation on the ground, it was also beneficial to volunteers and humanitarian organisations in providing insights into their operations, which helped to create awareness, recruit more volunteers, as well as raise funds (Kamini et al. 2015). According to a report by the International Federation of Red Cross and Red Crescent Societies (IFRC), "[b]y bringing the potential supporter closer to the reality of the situation, people get a much better idea of what is happening on the ground than they do by watching a one-minute item on the evening news. They get a better understanding of the work done by the humanitarian organization and that increases their level of trust and willingness to support these operations" (IFRC 2013, p. 124).

In pondering the importance of access to Internet, use of smartphones and the information-sharing culture of social media, the author notes that several journalists along with other netizens began to probe online on the issue of illegal logging activities and mass deforestation that have arguably taken place in Kelantan (Mahavera 2015; Mariam Mokhtar 2015; Gaworecki 2015; Bernama 2015d; Panirchellvum 2015). They argued that the floods occurred at a major scale due to illegal logging, which they claimed was a result of, among other reasons, Kelantan's desperation to eradicate poverty, weak enforcement of laws on illegal logging, and that both the Federal and State Governments were to blame for allowing the activities to happen under their watch (Ibid). In response, Datuk Seri Shahidan Kassim, minister in the Prime Minister's Department, visited the State in the aftermath of the floods and declared that there is indeed an urgent need to replant the trees and recover the forest reserves (Bernama 2015e). The Secretary of the NSC, Datuk Mohamed Thajudeen Abdul Wahab, who confirmed that the floods in Kelantan were the worst experienced in the history of the state, also reported that the water levels of "bah kuning" superseded the last major floods of 1967, and that the NSC had identified two main reasons for its severity – Firstly, the changing climatic patterns and adverse weather effect, and secondly, the possible result of "uncontrolled land management and the swelling number of trees and exploitation of land resources" (Azlee 2015). **This may be an indication that the media and other online users' investigation into the matter through the sharing of environmental information had arguably spurred discussion among some members of the concerned public regarding the importance of maintaining**

environmental sustainability in increasing chances of survival in times of natural disaster. Being able to deliberate on the possible connection between illegal logging and the major floods could also be influential in persuading others to be more aware on how human activities could lead to environmental problems and to voice out their concerns to policymakers, who may then be pressured to act on the urgent issue.

Despite Kelantan's long history with floods, the author observed that the State did not appear to be well-equipped and ready to face the uncertainties of major floods or calamities (Fernandez & Azril Annuar 2015). The Menteri Besar of Kelantan, whose position as a leader would have required him to head the coordination of rescue and relief efforts, had to apologise for not being able to hand out aid to the people as he was trapped in his inundated home (The Malaysian Insider (TMI) 2014c). There was also a lack of an efficient and reliable system for providing information and effective communication to the people before, during and after the event of a natural disaster[237]. The author will analyse these dimensions further in Part 4 of this chapter.

[237] For example, a few news sources (TMI 2014a; Ikhwan Hazwan 2014) reported Kelantan leaders blaming the uncontrolled logging on illegal land-clearing activities, but seem to deny its connection to the floods.

7.4 PART 3: THE STORY OF KEMAMAN

In the district of Kemaman, which is located in the neighboring state of Terengganu, a somewhat different experience was reported by local leaders and residents during the same major floods. How did Kemaman face the major floods that arrived in 2014 and how did the people in the district's experiences differ in that year, compared to those of the people who the author met and spoke to in Kelantan? This part of the chapter will examine the flood mitigation model that was implemented in Kemaman during the 2014 floods.

7.4.1. *Strategic Flood Preparedness In Kemaman: A "Gold Standard"*

Being another state located on the east coast of Malaysia, Terengganu, which borders Kelantan, receives its share of heavy rainfall and floods during the monsoon seasons, and had also suffered from the devastating effects of the major floods in 2014, which resulted in more than 34,000 people evacuated (Malay Mail Online 2014e). However, Kemaman, which is one of the districts in Terengganu, had just introduced and implemented a flood preparation model that was designed to engage local community leaders and residents, enhance communication of information and collaboration between Government institutions and members of the public, improve public and telecommunication infrastructures, and prepare the district in advance of major floods. Prime Minister Najib Razak, who visited the district of Kemaman during the floods, commended its "gold standard" flood preparation model, and subsequently

selected it to become the model flood SOP for preparedness in facing disasters at national level: “The flood management in the Kemaman district had set the target to achieve the flood management level specified (the gold standard), a level that is very high… I want to suggest that the template of the Kemaman model be adopted in other places too” (Bernama 2015c). The State Government of Terengganu has since been collaborating with the National Security Council (NSC) to outline the model that was implemented before it can be applied as an SOP for other areas. As explained by Kemaman’s member of Parliament (MP), Ahmad Shabery Cheek, “[a]ll measures based on the Terengganu model will be scrutinised again with several improvements which, when the time comes, can be adopted in other places” (Borneo Post Online 2015).

Kemaman’s model was introduced after the district experienced severe floods in 2012 and 2013 (Bernama 2013b; Rosli bin Mohamed 2015). Kemaman was also the worst-hit district in Terengganu during the 2014 floods, with a record of over 24,000 evacuees. The planning process was reported to have begun as early as April 2014 (Borneo Post Online 2015) and the model was structured in three parts – pre-flood, during the flood, and post-flood, which the author will describe below (Erda Kursyiah Basir 2015):

1. Pre-flood

The strategic planning for the pre-flood preparations focused on providing and organising information, training, supplies, facilities and relevant infrastructure. This was done through setting up a Kemaman central committee for floods by engaging with representatives from each of the four state legislative

assembly constituencies (also known as sectors) of Kemaman, which are Kemasik, Kijal, Cukai and Air Putih (Abdul Mursyid Zainuddin 2015). Each of the sectors' community leaders determined the location of their main flood relief centres, and then worked with the Kemaman central committee to engage with the people through flood awareness programmes. The awareness programmes were delivered by the NSC and included providing basic advice and tips on how to face the floods, information on the relief centres, and distribution of flood kits[238].

Additional pamphlets were also distributed locally to keep the public informed of which centres they could head to once the flood occurs, while text messages were delivered to advise people where they could move their vehicles to, as well as which roads were accessible (Erda Kursyiah Basir 2015). Supplies and logistics were further planned by the creation of a list containing items that needed to be stocked, such as food, rescue boats, cooking gas, sleeping bags, and so on. In addition, structural changes were added, in the form of three basic helipads, a storage building and toilets, which were built in strategic locations to enable ease of access for army helicopters that would function to send and pick-up supplies. Volunteers were also recruited and trained, and the National Youth Skills Institute in Kemasik was selected to be the tactical headquarters for the Malaysian Armed Forces, medical teams and logistics support. The institute's campus served as a placement centre, cooking area and location to store donated items as well (Ibid). To ensure that all were well-prepared and informed

[238] The flood kit is a small ziplock bag packed with items for basic hygiene such as toothbrush, toothpaste, soap bar, shampoo, conditioner, and a small towel.

of their roles during times of flood, a flood simulation (i.e. a practice drill) was carried out to test the Secretariat and organizing committee's readiness in an event of a flood, including processes for receipt of essential items, registration of victims, management and distribution of food, and shelters for the victims (ibid).

To maintain the communications system during floods, telecommunication companies such as Telekom Malaysia, Maxis, DiGi.Com, and Celcom Axiata were engaged and told to raise their respective equipment at the transmitter sites to above water level. At the same time, permanent and mobile generator sets, cell on wheels[239], and walkie-talkies were prepared while thirty-four boats were provided by the State government, and seventeen from the Kemaman parliament (Ibid). The Terengganu amateur radio and recreation club was also engaged with to participate in providing on-the-ground information and communication. Most importantly, all information concerning the development of the district's flood preparation was shared amongst members of the committee through social apps to keep everyone updated (Ibid).

2. During the Flood

This phase of the flood management model focused on rescuing flood victims and also placed importance on ensuring that the relief centres were equipped with sufficient items to help keep the evacuees as comfortable and connected as possible. This was done through the distribution of various articles such as blankets, sarongs, mats, sleeping bags, and power banks. As previously

[239] Cell on wheels (COW) are portable mobile cellular sites that provide "temporary network and wireless coverage in locations where cellular coverage is minimal or compromised" (Erda Kursyiah Basir 2015).

planned and simulated, the flood rescue and relief operations were carried out when the flood arrived in December of 2014. Meetings on the flood operations were held daily at 8.30pm and seven-day supplies of food and drinks were sent to each flood relief centre. A temporary clinic and vector control were also set up to treat victims that were in need of medical attention, and to prevent the spread of disease. Some activities were also carried out at the relief centres with the help of various Government agencies, such as coloring activities for children, religious community prayers and preparing meals by cooking together.

3. Post-flood

This final part of the Kemaman flood management model is aimed at assessing the damages that were caused to public infrastructure and private properties in the district as a result of the flooding event (Erda Kursyiah Basir 2015). The assessment was conducted by the central committee after the 2014/2015 floods. The organization of donated items was centralised at Kemaman's district office and upon one week after the closure of the last relief centre, a post-mortem of the flood management operations was carried out as well as proposals for further improvements (Ibid).

7.4.2. *Outcome of Implementing the Flood Preparedness Model*

According to Kemaman's central flood committee, the district's experience with the major floods was considered well-managed and kept under control (Bernama 2015). The committee also gained more knowledge on the defects and

weaknesses of the district's public drainage system, flood mitigation schemes, infrastructure, and facilities at the relief centres, which consequently led to proposals being delivered to relevant Government authorities, as well as pressure placed on them to resolve critical matters as soon as possible (Ibid).

As previously mentioned, the author did not manage to visit Kemaman during the floods and thus cannot offer any personal observations on the situation, such as what the author had done for the case of Kelantan. However, by referring to the newspaper articles and social media sources that covered the people's responses to the flood, Government action in Kemaman, as well as information provided on the flood mitigation model that was implemented, it would appear that the locals living in Kemaman may have been better prepared in facing the disaster, compared to their neighbours in Kelantan. The author opines that the detailed organisation of the planned strategies and heightened level of readiness that were undertaken to ensure that Kemaman would be prepared to face floods had arguably saved lives and in some cases, lessened damage to public properties and infrastructure. The author believes that this had much to do with the active compilation and dissemination of vital information to the people, the proactive efforts to engage the public in creating awareness and ensuring that they were prepared for the arrival of the floods, and the display of volunteerism and organized teamwork between Malaysian citizens, local communities and the Government.

In other words, the Kemaman flood management model was built on the notion of citizen-centricity and "people power" as it placed much emphasis on the participation and cooperation of the local residents, community leaders, volunteer

corps, and NGOs with the responsible Government agencies. In this model, the Government served to provide funds and facilitation for infrastructure and collaboration between different groups and organisations. However, it was the key stakeholders that are the people of Kemaman, who played the most important role in making the model function as successfully as it did during the major floods. With guidance from their community leaders, it was the people who participated in suggesting the locations of the helipads, relief centres and actively responding to the authority's advice on where to go when the floods arrived as well as how to manage their personal belongings.

A news article that was published after the floods receded emphasised the important role of the flood management model in recruiting and training volunteers. The Fire and Rescue Department Director-General, Datuk Wan Mohd Nor Ibrahim, was reported in the article to have said, "In the recent floods, the community-based force helped in the evacuation process so areas where they were present did not experience a lot of difficulty…We had a trial run for the corps in Kemaman, which was also affected by floods, but the disaster management in Kemaman is among the best" (Dina Murad 2015). Another article reported that Kamariah Ismail, a woman from Kemaman who was affected by the floods and had to evacuate to one of the relief centres, posted a thank you message on her Facebook, stating her opinion of the well-organised efforts that were made to help the people: "The best SOP (standard operating procedure), enough food, we had sleeping bags, we had other contributions, children were treated well. I would give a 5 star to all the government agencies which kept on giving us motivation" (Erda Kursyiah Basir 2015). Another resident, Noor Hayati

Hassan, was also reported to have acknowledged that the recent flood in Kemaman was not as disastrous as the one that struck the district in 2013 because warnings were issued beforehand to alert the residents: “In 2013, the water level rose beyond our expectations. Where the recent floods were concerned, we were fortunate that the Drainage and Irrigation Department had issued a warning and notice to us on the high tide and rain. So we started making preparations early” (Ibid). Suzana Ghazali as well claimed that being kept informed was one of the reasons her family were better prepared for the floods in 2014:

> “[T]he 2013 floods were worse compared to the recent one. In 2013, I was forced to move to a relief centre at Sekolah Kebangsaan Seri Geliga. This time, we were prepared for the floods and we had packed up our essential belongings earlier. The flood management was also better this time because we were informed earlier, and the state government and other authorities involved had also made their own preparations” (Ibid).

The various statements reported above illustrate how the implementation of the Kemaman model for flood management was commended for preparing the people not only as potential victims but also as potential rescuers in the case of floods. It also appears to have impacted the way people perceived the Government’s ability to handle such urgent situations, and allowed them to understand the crucial role they can play to save themselves and others in the

scenario of a flooding disaster. In this regard, the author believes that such a model served not only to prepare the people for the floods, but also functioned to empower them in managing and adapting to situations involving floods. This is especially important as the country continues to experience the effects of climate change, including weather extremes (Bernama 2015a; Bernama 2016).

The Kemaman MP stated that "[m]ost people knew exactly what they were supposed to do once the flood signal went out" and a news columnist reported that due to the flood preparations in Kemaman, "[t]here was no such thing as desperate people seeking safe haven in the hills like in Kelantan" (Tan 2015; beritanasionalrtm rasmi 2015). These statements indicate although Kemaman was hit by major floods that took place at the same time as Kelantan, the people in Kemaman had arguably fared better. A few of them had even expressed that they felt the flood this year in Kemaman was not as devastating as the ones that occurred in the past years (Erda Kursyiah Basir 2015). However, the author noticed that this perception could be mainly due to their improved level of preparedness and by witnessing the efficient response of their local Government to the situation, as opposed to their knowledge of the actual "severity" of the flood itself[240]. For example, Noor Hayati was reported to have mentioned that after the 2014 floods, she did not get to see the "heaps of [post-flood] debris that used to

[240] According to a news report published in December 2013, nearly 20,000 people in Kemaman were evacuated during the 2013 floods, which is lesser than the amount of evacuees in 2014 that went up to over 24,000 (Bernama 2013a). The researcher was unable to locate data on rainfall levels in 2013 and 2014 for Kemaman, but believes that it would not be accurate to try to determine the severity of a flood based only on rainfall as other factors could influence the occurrence of floods besides the amount of rainfall received in an area (such as the effectiveness of the drainage system or the influence of unusual moon activity on the tides). Nevertheless, looking at the number of evacuees could help to gauge how many people were affected from the severity of the floods that had occurred in 2013 and also in 2014. The numbers stated above were reported in a news article, which can be accessed through the following link: <http://www.themalaymailonline.com/malaysia/article/flood-in-kemaman-recedes-fully-last-evacuees-return-home> [Accessed 23 March 2015].

be a usual sight in previous years when the floodwaters receded" because the Kemaman Municipal Council had been quick in cleaning up the mess (Erda Kursyiah Basir 2015). Suzana Ghazali (as previously stated) had also mentioned that the 2013 floods were "worse compared to the recent one [in 2014]". It is possible that her perception of the severity of the floods may have been due to the fact that during the 2013 event, she was forced to move to a relief centre (supposedly without being prepared for the disaster) while in 2014, she felt more prepared because as she explained, "we had packed up our belongings earlier" after having received information regarding the floods (Erda Kursyiah Basir 2015).

Hence, the author contends that in the case of Kemaman, being provided with essential information to prepare oneself for natural disasters, along with having a sense that the Government was capable of protecting and caring for citizens in times of need had an influence on the people's ability to respond to the flood and arguably in how they viewed the severity of the situation. Additionally, the information gathered on past experience and future prospect of the floods appear to have moved local leaders to adopt a proactive approach not only by preparing appropriate facilities, supplies and logistics in advance, but also by essentially engaging with the people, providing them with comprehensible knowledge and support, and utilizing mobile technology to deliver fast and up-to-date information as well as emergency alerts. Therefore, although the floods in Kemaman did cause devastation to public life and property as it similarly did in Kelantan, the people of Kemaman were reported to have been generally knowledgeable about what to do and what to expect in such a situation. The

author believes that this displays some of the ways in which access to information and public participation could be empowering, and if properly nurtured, it may possibly lead to developing a more informed citizenry that would be more capable of participating in environmental decision-making processes.

7.5 PART 4: ANALYSIS, DISCUSSION OF FINDINGS AND LESSONS LEARNT

7.5.1. *What Do the Cases of Kelantan and Kemaman Reveal?*

The author has observed notable aspects of the flooding situation in Kemaman and Kelantan that appears to have made a significant impact on the people's experience of the disaster and perhaps even in their perception of the Government, which may help reveal some of the deficits and barriers that could be faced in Malaysia with regard to access to information and participation. The various dimensions of these notable aspects are discussed below:

7.5.1.1. ***Information, Education and Awareness***

For the Kelantanese, their knowledge of the floods relied mostly on their past experiences and the lessons learnt from stories shared by their elders. As valuable as these types of information are, unfortunately, the people's past experience could not equip them with the ability to predict the flood's potential severity. They were thus not aware of the major risks involved and were not effectively informed by their local leaders or local news source beforehand. As

mentioned in the chapter, Kelantan's population mostly lives in rural conditions[241] and although the literacy rate has improved since 2000[242], it is still ranked amongst the lowest three out of all the states in Malaysia. Kelantan's computer literacy rate is also the second lowest in the country[243]. As Malaysia places further efforts on transitioning to becoming a developed nation by year 2020, more information, public services, and business transactions will be converted into digital form and made available online. Some parts of Kelantan's population could very well be left behind if they do not own or are incapable of using a computer, cannot gain access to the Internet, or are not skilled in using smart devices. The vulnerable groups in Kelantan, such as poor and old women living in rural areas with low Internet penetration[244], may be more at risk of environmental changes and would be less able to save themselves from natural disasters if they are left out from receiving early warnings or other vital information such as changes in Government policies. In relation to this research topic, it is an essential aspect to consider if the Government wishes to actively

[241] According to the Department of Statistics Malaysia (2011), Kelantan's level of urbanization, at 42.4% in 2010, is the lowest out of all the states in Malaysia. The statistical bar graph displaying this data can be viewed through the following link:
<http://www.statistics.gov.my/index.php?r=column/cthemeByCat&cat=117&bul_id=MDMxdHZjWTk1SjFzTzNkRXYzcVZjdz09&menu_id=L0pheU43NWJwRWVSZklWdzQ4TlhUUT09> [Accessed 12 April 2015]. Additionally, Che Hashim bin Hassan (2011) in his study found that the state of Sabah has the highest poverty rate at 23%, followed by Terengganu (15%) and Kelantan (11%). Although Terengganu is statistically poorer than Kelantan, "In view of the scarcity of natural resources compared to Terengganu and Sabah which are receiving oil royalties from the Federal Government, Kelantan is potentially the poorest state, and will have the highest incidence of poverty in the near future". The study can be found through the following link:
<http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1867885> [Accessed 12 April 2015].

[242] According to the Malaysian Department of Statistics (2011), Kelantan's literacy rate has improved in ten years, from 90.4% in 2000 to 95.7% in 2010.

[243] According to the Malaysian Department of Statistics (2011), Kelantan's computer literacy rate is at 48.1% in 2010. Information on computer literacy was first recorded in 2010, therefore no earlier data is held by the Department in which the author could refer to in order to compare the current rate to those of past years.

[244] In 2014, the Deputy Minister of Communications and Multimedia stated that Kelantan's broadband Internet penetration is still at a low 41% (Bernama 2014a).

disseminate environmental information to the public online, as doing so would require Malaysians to be structurally and economically able to be connected to the Internet, and also be literate enough to use ICT tools and devices such as computers and mobile apps.

People who live in poverty may also be more willing to take risks if doing so could help them improve their day-to-day lives, thus leading them to generally give very low priority to serious hazards, which tend to happen once in a while: “They apply much higher significance to problems of everyday life and issues that they have to confront for normal survival, most of which are linked to their livelihoods…[M]ost people live with risk. They are willing (or forced by poverty) to live in dangerous locations affected by hazards, in order, mainly, to follow their livelihood and earn their living…[P]eople give highest priority mostly to everyday needs” (IFRC 2014, p. 67). The author observed this in Kelantan, and was indeed informed by a few locals that they know of people who live right on the riverbanks, which are one of the first areas to receive floods, but that after every flooding event, these people would return to the same location and rebuild their lives there (Personal conversation with Kelantanese local, 28 Dec 2014). That said, the World Disaster Report revealed that in the case of natural disasters and the compromises people are willing to make between facing serious hazards and improving livelihoods, one cannot assume that information and education guarantees that people will understand the risks, and will thus leave such dangerous, high-risk areas: “‘Filling the gap’ in knowledge is not the same as understanding […]. Culture, psychology and emotion intervene as ‘filters’ that alter the way information is used to change attitudes and behaviour. Any new

knowledge inevitably has to interact with already-significant attitudes and emotions, rather than providing the means to change attitudes. This means that it does not always produce the intended behavioural outcome" (IFRC 2014, p. 72-73). Nevertheless, the author would argue that access to information and education is still important and much needed as it could function to create awareness so that people could better manage their disaster experiences, and improve their likelihood of surviving instances of floods or other natural disasters. For example, if people who live near riverbanks in Kelantan were informed beforehand of when floods are expected to arrive, they could have a better chance of preparing themselves and their belongings, as well as to know the whereabouts of strategic locations that have been designated for them to go to in cases of major floods. The author believes that in this regard, the aim of access to information and public participation would not be to convince people to leave their lands, but to help furnish their own experience and knowledge of the floods with new knowledge of floods (derived from credible studies and scientific data), especially in the context of climate change, and what they need to know to prepare themselves.

Although the state of Terengganu is also considered as one of Malaysia's poorer states[245], its rate of literacy is higher than that of Kelantan[246]. The same can also be said of its computer literacy rate, which is also considerably higher

[245] A table displaying poverty incident in Malaysia by state from 1970 to 2009 can be referred to in Zulkarnain A. Hatta and Isahaque Ali (2013, p. 50) through the following link: <http://www.ccsenet.org/journal/index.php/ach/article/viewFile/25475/15802> [Accessed 14 April 2015].

[246] At 97.7% in 2010, compared to 93.2% in 2000, according to the Malaysian Departments of Statistics (2011).

than Kelantan's[247]. In the district of Kemaman, the people were arguably more informed and aware of what they were required to do when the flood arrived and where to go after receiving the flood alert. Some of them had also attended the talk given beforehand that was conducted by the NSC, and were thus informed about the floods and the location of the nearest relief centres. Compared to Kelantan, the people of Kemaman had received information and early warning on the floods, and were also more aware of the situation. In addition to both the state's level of poverty, a lack of information, education and awareness could have been one of the factors that had exacerbated the flooding situation in Kelantan's Kota Bharu, more than it did in Terengganu's Kemaman.

7.5.1.2. ***Communications and Connectivity***

During the floods, the author had observed that the youths of Kelantan appeared to be smartphone-savvy and generally seemed to be computer-literate but knowledge of using computers and the ability to browse online may not always lead to an increased interest in obtaining useful or educational information, including that on changing climate extremes or natural disaster warnings. A study by Goldfarb and Prince (2008), for example, found that Internet-use was influenced by various factors, such as high income and education, and that those who went online to "waste time" were mainly from lower incomes or were less educated. Vicky Rideout, author of the Kaiser Family Foundation study that was conducted in the United States, also observed that

[247] At 57.6% (Ibid).

"[d]espite the educational potential of computers, the reality is that their use for education or meaningful content creation is minuscule compared to their use for pure entertainment…Instead of closing the achievement gap, they're widening the time-wasting gap" (cited Richtel 2012)[248]. **The author would suggest further research to be conducted in the same area concerning Malaysia's Internet use as well.**

According to the European Commission, "Digital Literacy is fast becoming a prerequisite for creativity, innovation, and entrepreneurship; and without it, citizens can neither participate fully in society nor acquire the skills and knowledge necessary to live in the 21st century" (European Commission 2003, p. 3). Compared to other states in Malaysia, statistics show that computer literacy in Kelantan, the state that was hit the hardest during the major floods, is ranked second to last in the country and thus the author opines that the state would still have a long way to go in achieving digital literacy. To clarify, there is a crucial difference between "computer literacy" and "digital literacy". According to Techopedia.com,

> "Computer literate is a term used to describe individuals who have the knowledge and skills to use a computer and other related technology. This term is usually used to describe the most basic knowledge and skills needed to operate software products such as an operating system, a software application, or an automated Web

[248] The article discussing this issue could be referred through the following link: <http://www.nytimes.com/2012/05/30/us/new-digital-divide-seen-in-wasting-time-online.html?_r=1> [Accessed 16 June 2015]

> design tool. [...] Computer literacy involves learning how to access information and perform basic operations on a computer. It can be understood in the same way that traditional literacy applies to print media. However, because computers are much more advanced than print media in terms of access, operation and overall use, computer literacy includes many more types of cognitive and technical skills, from understanding text and visual symbols, to turning devices on and off or accessing parts of an operating system through menus" (Techopedia 2016).

On the other hand, "digital literacy" reaches beyond the knowledge and skills of accessing basic operations and information on a computer (or related devices). Under its Digital Literacy Project, Cornell University that is located in the United States describes digital literacy as "the ability to find, evaluate, utilize, share, and create content using information technologies and the Internet" (Cornell University 2009). While this succinct definition provides the general idea behind the term, the author much prefers the definition provided by The New York City Department of Education, which goes further into describing the notion of digital literacy and what makes it more than just finding, sharing or creating information on the Internet:

> "Digital literacy is more than knowing how to send a text or watch a music video. It means having the knowledge

> and ability to use a range of technology tools for varied purposes. A digitally literate person can use technology strategically to find and evaluate information, connect and collaborate with others, produce and share original content, and use the Internet and technology tools to achieve many academic, professional, and personal goals" (The New York City Department of Education 2016).

In seeking to define digital literacy, Lisa Levinson of The Women's Learning Studio[249] (Levinson 2015) explained how she and Doris Reeves-Lipscomb have incorporated the work of Harold Jarche and Howard Rheingold to produce their own understanding of what this term should encompass. Through a blog post on the organisation's website, she shares an infographic that was created to display a summary of their definition of digital literacy (Refer to Figure 38 and Appendix for more detailed information on the infographic). A part of their definition involves being able to detect inaccurate information, training one's attention to turn information overload into knowledge navigation by learning how to make the best use of time and online resources, and knowing how to interact with others online as well as how to tweet, blog, comment and organise online so that one would be better able to share information and learning with other users.

[249] The Women's Learning Studio is a start-up venture that works primarily with women's associations to provide "a place where women could safely experiment with online learning and internet tools and develop online leadership skills" (The Women's Learning Studio 2016). The organisation's website can be accessed through the following link: <https://www.womenslearningstudio.net/> [Accessed 6 January 2016].



Figure 38: Digital literacy, according to The Women's Learning Studio (Levinson 2015)

In the case of the 2014 floods, the author noticed that many images and texts of the disaster were significantly shared online through various social media platforms. Through the author's observations online and offline, it is apparent that the youths of Kelantan are active in their participation in social media. Therefore,

while Kelantan may have a lower computer literacy rate compared to other states in Malaysia, teenagers and young adults that make up the majority of the population[250] are becoming more exposed to new technologies such as smartphones and tablets. On one occasion, the author noticed that as a result of being blocked by the floodwaters and told by parents to remain home to watch their younger siblings, a group of teenagers and young children who either had their own mobile phones or were borrowing their parent's devices, were busy communicating with school friends and relatives through mobile apps such as Whatsapp as well as Facebook. They showed videos that they had edited themselves to the author, and displayed their ability to navigate through websites such as Youtube, even though they were very young and possessed a beginner's level of English language. In this regard, the author believes that the Internet and mobile phones have indeed taken a more prominent role in the lives of Kelantan's young population. Further research should be conducted on this area as it would be helpful to know how the youthful majority interacts online. It is possible that at this stage, they may not yet be competent enough to tell the difference between credible and non-credible information that they encounter online, even though they may appear to be "literate" enough to download apps and music, upload pictures, videos and post Facebook statuses.

Nevertheless, the use of social media was very much utilised during the floods, not only as a form of entertainment but also as a way of staying connected with friends and family, as well as to keep oneself updated on what

[250] The majority of Malaysia's population is 20-24 years old followed by 15-19 years old and 25-29 years old, while the majority of Kelantan's population is 0-4 years old, followed by 10-14 years old and 15-19 years old (Department of Statistics Malaysia & EPU 2010).

was going on in the flooding event through social contacts. In the absence of information from local Government leaders, social media arguably played a major role in keeping people informed of the situation by allowing them to share each other's stories and images. A study on how social media helps people feel comforted during natural disasters was conducted in Australia (Taylor et al. 2012) and supports the author's perspective on the role of social media during the floods that took place in Malaysia:

> "[S]ocial media can allow people to act as amplifiers of official information and also help people not to feel alone…Not only can social media limit the psychological damage caused by rumours and sensationalised media reporting, it also allowed communities to share their stories to a sympathetic audience…Overwhelmingly people reported feeling a sense of connectedness and usefulness, felt supported by others and felt encouraged" (AAP 2012).

The author also realised that the Internet-savvy part of the population could communicate the news or information they received online to members of the population who were unable to do so. In the same example of the young teenagers that the author observed, they proceeded to relay the information or update they had received online to their cousins, parents and grandparents who were offline. These people would then spread the news through other means such as telephones and face-to-face conversations (Author's observation, 28

Dec 2014). It is understandable, therefore, that when the electricity and telecommunications systems were disconnected in various parts of Kelantan, many people began to express a feeling of being disconnected and uninformed. As seen in how one of the flood victims, an old Kelantanese woman, desperately asked the author to tell her what had been reported in the news ("I don't know what is going on out there and what is going to happen to us. Have you seen the news? Could you tell me what you've heard?), the disconnection of electricity, inundation of telecommunication infrastructures, and thus limitation of access to information had affected many Kelantanese in ways that it did not for the people of Kemaman.

Indeed, during the major floods, the author noted among some groups of Kelantanese people that there existed a lack of confidence in the Government's capacity to manage the situation, while several expressed anger in what they perceived as the Government's slow response to saving lives and providing basic necessities (Personal observation and conversation with flood victims, 28 Dec 2014). A part of their sentiments may have been exacerbated by the disconnection they were experiencing from routine sources of information. Thus, they had no information or communication regarding the major floods from the bigger picture and what was being done by authorities at the time (Ibid). As Ngai (1997) had mentioned, people would usually rely on government relief for recovery in times of major floods[251] (p. 73). However, this disconnect from the world and lack of Government presence, either in the form of visits from top

[251] The author noted that a few of the locals were not upset with the State Government, however. Their reasoning was that their representatives' homes were affected by the flood, and thus it was understandable that they could not help the people, whereas the Prime Minister and Federal Government were safe and have the means to deploy help to the needy (Personal conversation with local Kelantanese, 26 Dec 2014).

leaders, local MPs, or Government rescue teams, may have contributed to their expressed anger and disappointment towards the authorities. Through observations and interactions with the affected locals and Government officials, the author discovered that the shock of the tragedy that was experienced by some locals was arguably heightened by a lack of information and communication before, during and after the floods ensued.

The local authorities in Kemaman had worked with telecommunication companies beforehand to raise the level of their equipment so that it would not be affected by floodwaters, and thus were structurally better prepared than Kelantan in maintaining connections for energy and communications. In addition to that, powerbanks were given to people who were stuck at the relief centres, so they were able to maintain their connection with the outside world through their mobile devices (Bernama 2014f).

7.5.1.3. ***Politics and Governance***

The situation of Kelantan during the floods and the lack of information and communication may have led to the spread of gossip and feelings of anger amongst the Kelantanese towards the rescue teams and the Federal Government. Some Ministers who were able to, began to pay visits to their flood-affected constituencies (TMI 2014d). However, rumors had begun to spread of people in Kelantan complaining that the Federal Government was not paying enough attention to the Kelantanese and was not responding efficiently enough

to save their lives[252]. One of the roots of such complaints may derive from the fact that the state of Kelantan has been under the ruling of one of the opposition parties, PAS, which is generally known in Malaysia to have a history of strained ties with the Federal Government. Berrebi and Ostwald (2011) argue that natural disasters can strain a society and its government, thus creating vulnerabilities that could be exploited (p. 383). Disasters can also expose governments to greater scrutiny, as they explain,

> "Despite evidence that victims can pull together to provide mutual support in a disaster's wake, the perceived failure of a government to provide a fair and sufficient level of assistance can lead to political discontent (Olson and Drury 1997). Political tension and spontaneous collective action by non-government groups can result as the inability to provide an adequate or equitable distribution of public services after a disaster erodes the legitimacy of that government in the eyes of the general public and any opposition groups" (Berrebi & Ostwald 2011, p. 385).

The NSC stated that Kelantan's poor flood management was due to the State Government's failure to cooperate with the Council (TMI 2015d). This is an

[252] Such feelings of dissatisfaction were shared with the author by a few people who complained that they had to wait for hours before the rescue teams saved them and questioned why the Federal Government was not able to use the money and equipment it has to help provide them with enough food, shelter or clothes. Interestingly, many did not direct their anger towards Kelantan's State Government, explaining that their local leaders had already done a lot to help them in their lives and that if anything, the people were the ones who should return the favour and help the local leaders, whose homes were inundated in floodwaters.

important aspect that may influence the success or failure of implementing flood preparation programmes, as Kelantan functions under a different template of governance compared to Kemaman, and may have limited access to Federal networks and resources. It also implies that access to information during times of natural disaster may be helpful in dispelling baseless rumors and calming political tension that may arise. At the same time, public participation throughout the process of flood preparation may be helpful for affected residents to feel more confident with Government's ability to manage the disaster and perhaps allow them to grow less dependent on the Government by empowering themselves to take action.

7.5.1.4. ***Religion and Culture***

While politics is entrenched in the life of Malaysians, religion is also an important element in Malaysian society, and is closely linked to the people's cultural practices, identities and oftentimes their ethnic backgrounds[253]. According to the 2014 World Disasters Report, "Religion and other beliefs play an important role because they help explain and sometimes justify why disasters occur. This can help people deal with questions about why something devastating happened to them: they can turn to their beliefs for comfort after an event occurs" (IFRC 2014, p. 41). As a Malaysian, the author has observed that when a natural disaster occurs in Malaysia or any type of national catastrophe is faced by the country, it is normal to witness mass prayers being conducted

[253] The Malaysian population (reported for 2010) is made up of a majority of Muslims, followed by Buddhists, Hindus, Christians, and others (Department of Statistics Malaysia 2011).

among communities of various beliefs. Rulers of the state such as His Majesty the Yang di-Pertuan Agong[254], and Government leaders such as the Prime Minister and other politicians, would usually join the people in prayer to seek strength, patience, protection, and guidance in times of hardship. Religion can thus become a source of calm, comfort and emotional support for the people during natural disasters. As explained by the IFRC (2014), "People do not like uncertainty and unknowns. Religion and other beliefs play an important role because they help explain and sometimes justify why disasters occur. This can help people deal with questions about why something devastating happened to them: they can turn to their beliefs for comfort after an event occurs. For those living in dangerous places, a belief that a high-impact hazard will happen because of a divine intervention offers some rationality: at least they have a reason why it happens" (p. 41).

Turning to religion in the event of a natural disaster is not a practice that is exclusive to Malaysia. The 2014 World Disaster Report also explains that "studies imply that traditions and religious customs play a significant role in building disaster-resilient communities through rituals and festivities. In Tohoku [Japan], the most disaster-affected region, there is evidence of Shinto shrines having played a significant role in keeping communities together" (IFRC 2014, p. 50). During the Malaysian floods of 2014, many people sought solace in their religious beliefs, as was apparent in their community praying activities and also

[254] This is the official salutation that is commonly used to refer to His Majesty the King of Malaysia.

displayed online through the use of hashtags[255], the uploaded pictures and videos shared on social media, as well as the reported statements that were made by various political leaders[256].

The role of religion is central to the lives of the Malay Muslims that make up about 95% of Kelantan's population. Although religion also plays an important role in the lives of other Malay Muslims around Malaysia in general, in Kelantan the people's activities are closely intertwined with religion as they are controlled by laws (albeit loosely implemented) that are based on a strict interpretation of Islam by the State Government[257]. In this regard, the author noticed that the floods revealed the ways in which religion was used to gain political mileage and persuade voters towards supporting a political party's ambition. For example, many local residents of the affected areas still seemed to be ill-informed and unaware of some of the factors that could have exacerbated the severe flooding (Bernama 2015b). As the majority of the population in Kelantan lives in poor and rural conditions, it is possible that their state of unawareness could perhaps be rooted in their limited access to information, education and Internet connection. However, the author observed that instead of demanding to know more about what had caused the flood to occur as unusually as it did, or what measures

[255] Such as #Pray4Kelantan and #Pray4PantaiTimur ("Pantai Timur" is the Malay term for east coast, meaning the states located on the east coast of Malaysia).

[256] For example, in one of his media statements, then Deputy PM mentioned, "We pray so that Allah strengthen our spirits and that of the flood victims". Refer to <https://sg.news.yahoo.com/flood-damage-cost-billions-says-muhyiddin-034736444.html?.tsrc=att> (TMI 2015a) [Accessed 16 March 2015].

[257] For example, the State Government in Kelantan has applied rules over the years that have significantly changed the traditional Kelantanese culture. As observed by Raybeck & De Munck (2010), "Within the last few years, such traditional entertainment forms as the shadow play (*wayang kulit*), top spinning, and kite flying have either been banned or inhibited. Traditional curing ceremonies (*main puteri*) and *mak yong*, a form of opera indigenous to the area, have also been banned…Recently, the Municipal Council of Kota Bharu banned all public song and dance performances, whether performed by Muslims or non-Muslims" (p. 102).

could be taken to reduce further damage and loss, some members of the public including local leaders, preferred to attribute the severe floods to being another act of God meant to test or punish them (Malay Mail Online 2014b). As a result, these people displayed a certain level of acceptance over what had occurred, which could be a helpful disaster coping mechanism, but could also lead to dissolving the accountability and responsibility of the Government (be it State or Federal) in maintaining public infrastructure, managing environmental resources, providing vital information on the risk of natural disasters, and including citizens in the decision-making process. This notion was mentioned in the 2014 World Disasters Report: “Pointing to a divine cause of a disaster allows politicians and leaders to avoid taking the blame. This is useful when poor city planning, bad road construction or corruption are the real causes that translate a hazard into a disaster. Some politicians may use the disaster experience as a kind of moral awakening in terms of political and policy plans. In this way religious (or cultural) terminology can be used to disguise a political agenda” (International Federation of Red Cross and Red Crescent Societies (IFRC) 2014, p. 52).

Indeed, while there were some members of the media and public who were attempting to find out more about the factors behind the severity of the floods in Kelantan, such as illegal logging activities that have been observed in certain areas of the State (as mentioned in Part 2 of this chapter), a few of Kelantan’s State Government leaders referred to the flood as a sign from God. According to Nik Mohamad Abduh, one of Kelantan’s MPs and son of the deceased and extremely revered PAS leader, Nik Abdul Aziz Nik Mat, “[t]he flood is a reminder to all Muslims to return to Allah’s ways and stay away from His wrath…It

necessitates the perseverance of the Kelantan government to implement hudud laws" (Malay Mail Online 2014b). The Prime Minister, Najib Razak, also mentioned of religion after seeing the devastating impacts of the floods, but framed it in a way to remind people that protection of the environment is a religious obligation and a part of human responsibility: "This is a lesson for us to take action to ensure sustainable development and a reminder from Allah SWT to us actually, so we must remember the guidance contained in the Quran that humans are actually the cause, God will not be cruel to us but we are being cruel to our own selves" (Bernama 2014g).

Kemaman's post-flood management of the situation was more focused on improving the structural and administrative challenges that were discovered during the flood, while Kelantan's state Government placed more emphasis on the passing of Hudud law, which has now become an ongoing discussion that has caused heated debates in Malaysian society. According to Raybeck & De Munck (2010), "Kelantan has always been a stronghold of traditional Malay culture" (p. 98). However, over the years, the dominance of a religion-based party has clearly influenced the people's culture and certainly how they behave in public, including how opinions are expressed on political matters or on decisions that may affect their environment. Openly criticising local politicians who also play a role as the community's respected Islamic leaders may not be an act that many Kelantanese would want to voluntarily commit to doing in public[258]. Malay

[258] As observed by Raybeck & De Munck (2010) in their semantic differential studies of Kelantan in 1969 and 2001, "The power of the fundamentalists in Kelantan is not unlike some of those in our own society who claim special access to the moral high ground. To oppose such individuals is to oppose morality, or in the case of Kelantan, Islam" (p. 102).

culture in Kelantan also tends to be one that avoids confrontation[259]. Indeed, from the author's own experience with Kelantanese dialect, it is spoken in a more courteous, almost gentle-like manner, more so than dialects that the author has heard from other parts of Malaysia[260]. It also uses metaphors as well as allusions that carry other meanings. In this regard, the culture practiced of both Kelantan and Kemaman may somewhat differ due to the influences of different political parties in power, the forms of governance in place as well as the communication styles of the people. In relation to this research topic, access to environmental information supported by environmental education, such as those that teach people the effects of human activities to the environment and how they are linked to climate change, is thus essential in facilitating people to become more informed. After such disasters occur, the public should be able to participate in finding solutions for improvement through deliberating on some possible factors that may have worsened their experiences of the incident and suggest possible ways to lessen the damage of such disasters, instead of blaming it all solely on fate or God. Dumping it all on religion would only allow those in Government who are entrusted with managing resources and enforcing the laws to escape their responsibilities as caretakers of the nation's people and environment.

---

[259] According to Raybeck & De Munck (2010), "Kelantan Malays were inordinately sensitive to interpersonal relations and that they placed considerable emphasis on the importance of maintaining interpersonal harmony, *sesuai,* within the village context. These social and cultural values were most relevant to covillagers. Participants in social interaction wre expected to act with refinement, *halus*, rather than coarsely, *kasar*. This meant that their actions should reflect a concern for others and should avoid behaviors which were apt to lead to conflict" (p. 100).

[260] "To promote *halus* behavior and to reduce the likelihood of social encounters that might produce *malu* [a feeling that is an affectively charged state of marked discomfort akin to embarrassment but much more intense], there was *budi bahasa*, literally, the language of character. This was an elaborate code of courtesy behavior…Normally, displays of courteous behavior, although conventionalized, flowed naturally and were often inconspicuous in private settings. In public, however, such displays were obvious and pronounced, as they provided a means of reaffirming both one's social identity and one's relationship to others" (Raybeck & De Munck 2010, p. 101).

7.5.1.5. ***Policy and Legislative Challenges***

Challenges were faced in the way the floods were managed by the Federal and State governments. Malaysia does *not* have a legislative framework for flood risk management. Thus, the main instrument that is adopted to provide guidelines on flood risk management is the National Security Council Directive No. 20, which is a policy administered by the Prime Minister's Department to manage disasters in general (Zaharah Elias et al. 2013, p. 492). Unfortunately, it is not focused enough to govern flood risks. Elias et. al, in discussing the need to formulate a legislative framework for floods in Malaysia, argue that the current policy "merely acts to switch into action government machinery under several other legislation not specifically enacted for managing floods[261]. Flood risk management requires more than just responding to the emergency that has arisen" (p. 492). At the end of 2015, however, the current Deputy Prime Minister, Datuk Seri Dr. Ahmad Zahid Hamidi announced that following a cabinet meeting, the Government has set up a National Disaster Management Agency (Nadma) to coordinate government agencies in times of natural disasters. He was reported to have said that the agency would be placed under the Prime Minister Department, but would not be taking over the roles of other agencies i.e. the Malaysian Armed Forces, Fire and Rescue Department, police, etc. but was set up to coordinate efforts and ensure all assistance would be channelled to flood victims in a more effectively and orderly manner (The Sun Daily 2015).

[261] According to Zaiton Hamin et al. (2013), various statutes would have to be invoked whenever the National Security Council Directive No. 20 is enforced. They may include, among others, the Land Conservation Act 1960, Town and Country Planning Act 1976, Environment Quality Act 1974, Local Government Act 1976, Irrigation Areas Act 1953, Drainage Works Act 1954, National Forestry Act 1984 and Uniform Building By-Laws 1984 (p. 280).

Additional to the lack of a robust flood risk management system, legislation, and poor preparedness for natural disasters, which can hinder the overall effectiveness of rescue and relief efforts, apparent weaknesses lay in the availability of information and active communication of natural disaster risk to the public. This is an issue of particular significance in this research. Muhyiddin Yassin who was then Deputy Prime Minister of Malaysia, had expressed a need for the country to review its standard operating procedures on national disaster management, specifically highlighting the necessity for MetMalaysia's weather forecast system to be more efficient and accurate as forecasts are currently based on the previous year's weather pattern (The Star 2014a). A former Malaysian senator from an opposition party, S. Ramakrishnan, responded to the DPM's statements by questioning the ability of MetMalaysia, the National Security Council and the National Disaster Management Committee to manage the natural disasters that the country has and will face. Specifically, he enquired as to why the international news channel, CNN, was able to report on the prospects of heavier rainfall over Malaysia, Indonesia and southern Thailand through its weather forecast, while MetMalaysia was unable to do the same (Ramakrishnan 2015). Ambun Dindang, a MetMalaysia officer, was reported to have claimed that the Department had informed eleven different agencies after it detected a monsoon surge in mid-December through e-mail, fax, and short message services, as well as the public through its daily live broadcast over television and radio announcements (Spykerman 2015). He also stated that the public had misconstrued the role of MetMalaysia: "Our role is to forecast the

weather, which is not the same as predicting whether there will be flooding or not, or its severity, if at all" (Ibid).

The Malaysian Department of Irrigation and Drainage (DID), under the Ministry of Natural Resources and Environment, states that "[h]eavy rains and the subsequent high river flows are the major causes of flooding and landslides" (Department of Irrigation and Drainage Malaysia 2005). Nevertheless, with reference to the comments made by the MetMalaysia representative, it could be argued that due to other factors, the effects of heavy rainfall may not necessarily lead to flooding. While further scientific research could be conducted on the links between rainfall and flooding predictions in Malaysia, the current research topic has led the author to become more concerned on the blame-game described above, which the author believes could lead to confusion among the Malaysian public. If not the Meteorological Department, the National Security Council, the Natural Disaster Management Committee, nor Federal authorities or State leaders, then who is capable of or should be responsible for informing and alerting the public of an oncoming flood or other natural disaster in Malaysia? There needs to be clear communication of the roles of specific competent authorities in relation to their environmental responsibilities.

The DID has, nonetheless, made some efforts to keep the public informed through its Public InfoBanjir[262], a portal specifically set up to provide online warnings of flood levels to Malaysians. However, these important messages of warnings and data are only made available digitally, and may not be accessible

[262] The online portal can be visited through the following link: <http://publicinfobanjir.water.gov.my> (Department of Irrigation and Drainage Malaysia 2011) [Accessed 16 June 2015].

to all the people who live in flood-prone areas. From the author's conversations with several flood victims, no one mentioned having been informed of the floods through online sources or said they had been referring to information retrieved from the Internet (Personal conversation with local Kelantan residents, 27 Dec 2015). This indicates that while the use of digital technology may be helpful in delivering information in a fast manner and could potentially save lives, it would be rendered useless if people are unable to access it due to computer and digital illiteracy, or if they are not effectively informed of its availability.

Although there seems to be some effort carried out by the Government to keep the public informed on the advent of floods, the seriousness in providing access to such important information in Malaysia remains at a level to be desired. The author opines that the current online service provided by Malaysia's DID may not be adequate or reliable enough for the public to depend on as a reliable source of information on floods. As stated in its official webpage, "While DID strives to give the public the most updated data, *there will be times when data transmission problems will be encountered. Please use the data in this website with discretion* [emphasis added]". While use of the Internet and new technologies could provide an efficient way to quickly inform the public of any urgent events related to their environment, it could also be problematic when there is a failure to transmit the information on time and may not reach the intended audience. The 2013 World Disasters Report, for example, discusses the importance of access to technology in delivering reliable information that could save lives and, interestingly, addresses the setbacks of new technology by reminding us that "while the appropriate tools must be made available to

communities, it must also be acknowledged that new technology may not always effectively replace more traditional means to reach the largest possible audience. However, even traditional means like radio fail to bridge the 'last mile' and reach the 'information poor'. So there must be a conscious and active effort to address unequal access, rather than looking for a one-size-fits-all communication tool" (IFRC 2013, p. 31).

Indeed, such weaknesses or deficits in access to information that manifest in the form of both technical and administrative setbacks become evident, as discussed above, when they are tested in the event of a natural disaster. In the case of the Malaysian floods, there appears to be a pronounced lack of effective communication of information and public engagement, not only between the Government and the people, but also between the relevant Government agencies that are expected to be involved in the early warning and preparation system of natural disasters.

7.5.1.6. ***Other Observations***

In listening and observing the conversations and attitudes of some of the staff, reporters and civil servants who worked in one of the public radio stations based in Kelantan, the author noted that there seemed to be no contingency plan that would have better prepared the station and its employees to handle major floods in Kelantan. For instance, despite being aware of Kelantan's history with floods, no serious efforts had been apparently undertaken beforehand to ensure the protection of the station's electronic equipment used for broadcasting

(Author's observation, 25 Dec 2014). Thus, when the station was inundated with floodwaters, everyone was forced to evacuate and abandon the equipment, which was ultimately costly for the Government to replace. Other than the technical damages experienced by the radio station, there was also little sense of urgency and need by the people who worked in the station to broadcast the immediate development of the flooding situation to the public. Many of them returned home following the advent of the floods, and little initiative was taken to provide solutions to help overcome communication challenges caused by the flood (Personal conversation with senior civil servant on duty, 25 Dec 2014). Ultimately, instructions from their superiors meant that something had to be done and so the radio station was temporarily set up at one of the hotels situated on higher grounds in Kota Bharu, and hence more efforts were put in to report on the people's predicament, especially after receiving news that the Prime Minister was scheduled to visit the state (Author's observation and personal conversation with senior civil servant, 25 Dec 2014).

The author believes that such a scenario points to the recurring weakness in the vehicles for communication and information under the Government. There are still laid-back attitudes practiced in the Government's public broadcasting authority, which is supposed to be at the forefront of relaying urgent information to the public concerning important events such as floods. In the absence of information from official sources, people may instead turn to word of mouth,

which in the case of the floods of 2014, was quickly spread through mobile devices and social media, and led to cases of misinformation and speculation[263].

Other than the indifferent attitudes held by some authorities in reporting urgent environmental-related events to the masses, the floods also served as a reminder of the deteriorating state of the environment, and as previously discussed, the event spurred discussion on various environmental issues such as deforestation and climate change. The Prime Minister, for example, admitted that "[r]ampant opening of land especially for logging has an effect on the environment because there is no natural retention to stop the water from flowing directly to the river swiftly", while the news report adds that "the numerous logs floating in the river also had an effect when they became stuck under the bridges blocking the water from flowing and thus spilling over to the surrounding areas resulting in major floods" (Bernama 2014d). Even the Sultan of Kelantan, Sultan Muhammad V, stated, "Let us extend a hand of friendship with the environment and let us be aware that all disaster problems that have occurred are the result of our own doings…May Allah forgive us all and turn this plight into a much better situation" (Bernama 2014e).

Such statements made by Malaysian leaders and renewed discussions on the environment could help encourage the public to learn more about some of the reasons behind environmental problems, and how certain human activities could have damaging consequences that can cause risks to public safety and wellbeing. The flood incident highlights a bigger issue – the need for access to

[263] For example, rumors had begun to spread on the reasons behind the flood's severe occurrence in Kelantan, such as the release of water from a dam in Thailand, which was denied by the National Security Council's secretary. More details on this story can be found through the following link: <http://www.thesundaily.my/news/1272993> (Bernama 2014c) [Accessed 20 March 2015]

environmental information on the consequences of environmental destruction and the need for more public participation in the safeguarding of the Malaysian natural environment.

Aside from creating awareness and adding information on the environment in news reports and official statements, the flooding event had also highlighted how valuable information could be collected from the people themselves, as "guardians" of their local environment. For example, a blogger shared photos of his experience of the floods in Kemaman that occurred back in 2013[264], mentioning the extent to where the floodwaters had reached and compared it to his memory of an earlier flooding event. Another flood victim in Terengganu, Mat Jais Jah, also shared his observation of how much flooding situations have changed over the years[265]. Recording and compiling such eyewitness experiences of the floods could be useful for scientists, researchers and policymakers to understand more about the nature of the floods that have occurred in a specific area, how development activities may have affected the environment in that area, and how to further improve disaster preparedness. International environmental law emphasises the role of humans as the guardians of their environments, which are messages borne out by both the 1972

[264] The blogger wrote, "My printing shop located in Taman Chukai Utama was under 3 ft of water. We had been doing business in this place for more than 17 years and this is the first time it gets flooded. In fact during 1986 when there was a big flood this area was relatively unaffected". Refer to <http://pythonjoe.blogspot.co.uk/2013/12/worst-flood-in-kemaman.html> (Wong 2013) [Accessed 6 June 2015].

[265] He stated, "This is the worst flood in my 14-year stay here. During past floods, the water only rose to my calf but this time it came up to my waist…The floods in 1983 were bad but this time it is worse as more people are evacuated. Fortunately, we have comfortable relief centres and food. Thank god, now all is provided by the government…In 1983, we had to escape to hill tops in the village or squatted at houses of villagers built on high ground". Refer to the following link: <http://www.themalaymailonline.com/malaysia/article/terengganu-hit-by-worst-floods-in-three-decades#sthash.n70odVGF.dpuf> (Bernama 2014i) [Accessed 18 April 2015].

Stockholm Declaration and the 1992 Rio Declaration. Furthermore, the formal role that "citizen science" could play in providing data, evidence and information (for themselves but also for use by universities, researchers, regulators, policymakers and so on in protecting the environment) appears to be increasing[266].

7.6 CHAPTER SUMMARY

The recorded observations and analysis of the experiences of Kelantan and Kemaman during the Major Floods of 2014/2015 that were covered in this chapter revealed valuable insights into the layers and dimensions of responses to natural disaster. More crucial to this research, it displayed the importance of access to information in influencing how people experienced the event and how they interacted with one another as well as with the Government. As the 2013 World Disasters Report finds, "[w]hen disaster strikes, access to information is as important as access to food and water" (IFRC 2013, p. 73). In the case of Kemaman, it also shows that engaging with the public to provide information and giving them the opportunity to participate in the decision-making process can contribute towards bettering the strategic rescue and relief efforts carried out by the Government, in collaboration with the people.

Clearly, from the author's analysis, there are drawbacks being experienced with regard to the sharing and disseminating of vital information on the

[266] See, for example, the OPAL (Open Air Laboratories) citizen science initiative based at the Centre for Environmental Policy, Imperial College London: <http://www.imperial.ac.uk/opal> (Imperial College London 2016a) [Accessed 20 April 2016].

environment to the public, which has had a marked impact in Kelantan during the major floods that occurred in 2014. It may also be linked to problems in engaging the public to ensure that the information made available is communicated effectively to them, in a manner they could understand as well as remember. Through analysing the flooding situation in Kelantan and Kemaman, the author opines that having public access to environmental information could make a significant difference not only in keeping Malaysian society aware of their environment, but also in providing them with a better chance of survival during natural disasters. It is, however, essential to improve the current culture and mindset of Malaysians that still leads them to commit acts that are harmful to the environment and to themselves. Hence, through the lessons learnt from the floods in Kelantan and Kemaman, the author believes that access to environmental information should be supported by education, communication, connectivity, proactive citizen engagement and participation, as well as respectful consideration for the culture and beliefs of the people that are influential in determining how they may respond to natural disasters. Therefore, while the absence of information during times of disaster could indeed pose great challenges for the public and Government alike, as was seen in the case of Kelantan, its availability and active dissemination could save lives and improve relations between citizens and the Government, as was apparent in the case of Kemaman.

The stories of Kelantan and Kemaman also highlight the co-benefits of getting the public involved in flood preparedness programmes through engaging, informing, and training. Through such processes, people can be given the

opportunity to be empowered and to participate as proactive citizens in preparing themselves and their families for the floods. As the author observed, getting people involved in such efforts and keeping them informed with important flood updates could influence how they respond to the disaster, and how they may perceive the Government's ability to lead the country in times of disaster. In relation to this, having a sense of being connected and able to communicate as well as exchange information with others is essential in being able to cope with the devastating effects of a disaster. The increasing need to communicate and connect in this digital era also points to the rising prominence of digital technologies and communication tools, such as social media platforms, in the rapidly developing country of Malaysia. The Government may wish to explore more innovative ways to utilize popular platforms and methods used for delivering information to the masses, but would also have to be ready to manage the risks and take into consideration traditional methods needed to reach out to vulnerable communities that are not connected online.

This chapter also shines light on the deficits and challenges that lie in Malaysia's current system of access to environmental information and public participation. Administrative issues, lack of innovation and technological know-how, political tension, and "care less" attitudes with regard to delivering urgent information to the public act as barriers that need to be addressed if there is any chance for Malaysia to develop a more transparent, inclusive and participatory form of environmental governance. It can also be argued that more innovative solutions are needed in Malaysia to ensure that people can alert rescue teams of their location and situation in times of flooding. The author recommends further

research into such methods. Indeed, if the Malaysian public were to gain better access to environmental information that would help them be more informed, and be given better opportunities to participate in environmental decision-making processes, the author believes that their ideas, cooperation, and volunteerism could be harnessed and contribute to helping the nation face future instances of natural disasters.

CHAPTER 8

SUMMARY OF KEY DEFICITS & RECOMMENDATIONS

8.1 INTRODUCTION

Over the course of this research, the author has explored the research topic and placed the focus of this exploration on the case study that is Malaysia. In the process of doing so, the author investigated the embedded units of analysis and extracted some key lessons that were learnt within the context and scope of the research topic. Recognising the possible effects of culture, the author also identified and discussed some of the cultural traits[267] associated with Malaysia, as they are believed to possibly play a role in influencing how Malaysians receive and respond to environmental information, which may thus provide an indication of how they might participate in environmental decision-making processes. As a result of this research exploration, the author uncovered various deficits that arguably impede Malaysian public access to environmental information and participation in environmental decision-making. This chapter will provide a quick summary of these key deficits, which were identified throughout the research, and present the author's recommendations in the form of a conceptual framework as well as suggested areas for further research.

[267] These cultural traits can be referred to in Chapter 4, where the author discusses them under several subgroups.

8.2 SUMMARY OF KEY DEFICITS

Below, the author provides a summary of the deficits that were identified in Malaysia's current system of access to environmental information and public participation in environmental decision-making. The deficits are categorised and briefly elaborated in bullet points as follows:

8.2.1. *Legislation*

- At Federal level, Malaysia does not have freedom of information laws or any legal framework similar to the Aarhus Convention that can provide specific rights to citizens in accessing environmental information.
- Although the new EIA Order 2015 has changed the structure of the schedule of activities, public participation processes in environmental decision-making remains limited. The public has limited time to comment on an EIA report, and it is only available to access in specific places, some of which may not be easily accessible to some members of the public, especially those that live in isolated, rural areas. The EIA procedures in Malaysia limit the scope of public opportunities to participate. The new EIA Order makes clear in the law that items listed under the Second Schedule will require "public display and comment", which refers to "a display of a [EIA] report, at a place and within the time determined by the Director General, to obtain public comment in relation to that report". In this regard, participation of the public is limited to "display" (i.e. allowing access to view the report in a limited time) and

"comment in relation to that report" (i.e. allowing to make comments of only that which is stated in the report). Therefore, public participation is limited to making comments on the EIA report and relies on the public's ability to understand the details that are stated in the report, which tends to be mostly technical in nature (i.e. difficult for laymen to digest).

- Some restrictive laws that are still being enforced in Malaysia are acting as barriers to access such as the Official Secrets Act 1972, and the Printing Presses and Publications Act 1984. Information can thus be quite difficult to obtain from the Government, and participation could be strictly regulated. Due in part to the existence of such laws that limit access – some of which apply broadly framed prohibitions, civil servants may tend to be extremely careful with releasing information to the public, for fear of being punished and held responsible for the misuse of the information or in case the information is considered to be confidential. As a result of their extreme cautiousness, requests for certain environmental information may be rejected, even though the information is not classified as top secret.

8.2.2. *Institutional Structure & Human Resource*

- There is an overlapping of responsibilities between various Government bodies such as that seen in the AELB, Town and Country Planning Department and the DOE, which could sometimes cause inefficiencies and public confusion.

- There is also a lack of human resource in the Government, for example of those who can manage and prepare information for public release, which is thwarting the Government's willingness to agree the introduction of information laws.
- Government officials and civil servants may not be sufficiently trained or knowledgeable in knowing where certain data can be accessed and the current system does not have enough human resource to deal with organising so much information.
- Due to the DOE's role as enforcer of the EQA, a majority of its workforce consist of engineers and scientists. While this has served the technical purpose of the DOE's job requirement, the challenge has been that programmes introduced with the intention to reach out to the public have not been very effective, as they were not planned out well by personnel that are knowledgeable or have interest in matters related to public engagement (or social sciences for that matter). The same could be said for the Government officers tasked to conduct public participation processes.
- The DOE appears to be segregated from the Ministry of Natural Resources and Environment (which it is attached to). This was apparent in the way its personnel identified themselves, and to whom they pledge their loyalty. While the DOE holds specific duties to enforce the EQA and is mostly made of employees who are technical experts hired on contract, the stark distinction that is felt and seen between this Department and the Ministry that oversees it may discourage the sharing of information, open communication and

collaboration. This may unfortunately lead civil servants to continue working in silo and hold information among their immediate teams only.

- With regard to management of radioactive waste or by-product, the AELB is currently the Government authority in charge, and not the DOE. However, complications in public perception and skepticism could arise when industrial raw materials go from being labeled radioactive to non-radioactive products or waste, and vice versa. Both Government personnel and the public can get confused on which regulatory body should be in charge of monitoring such materials and waste, and hence which authority they should express their concern or questions to. In the case of Lynas, the involvement of four Ministries with different agencies that were directly involved in the case caused confusion and could have arguably spurred an increase in public fear and speculation over the situation. The result was that groups that were concerned did not really know whether to approach the AELB or MOSTI or turn to the courts. There was an obvious lack of unified information made available to the public by Government authorities when the issue first arose. For example, various public officials released statements to the media that was not aligned to the statements of those made by the AELB, so the public did not know which information was the correct version.
- There is a general lack of experts on environmental issues in Malaysia, and especially those who have the ability to communicate environmental information to the public in an effective manner i.e. in a way that the public can digest and understand.

- DOE does not have enough staff and human resource to manage information requests and complaints.
- Government civil servants are generally unequipped with knowledge on strategic use of social media for public engagement purposes and are unable to make full use of ICT technologies, as many lack skills in ICT.
- Civil servants are not adequately skilled in preparing online content that is easy for laymen to read and comprehend.

8.2.3. *Information & Communications Technologies (ICT)*

- Government websites are not standardised and finding environmental information can be quite time-consuming when one is unsure of where to go to obtain specific information.
- The design and user interface of Government websites are also unappealing and often appear to be too cluttered.
- Although social media is being used to reach out to the public on various issues and keep them informed on the activities of public officials, it is not being fully utilised by the Government to engage with citizens on environmental-related issues or to open discussion on what they think the Government could do to help to improve environmental conditions. Instead, social media appears to be used mainly for official announcements and political mileage (such as posting pictures of politicians helping old women or disabled children). Many members of the public have also abused their access to social media, using it to berate the Government or individual public

officials or generally anyone who does not share their ideology, provoke gender/racial/religious sensitivities, and spread lies and misinformation, which have often caused media frenzy and social unrest.

- The Malaysian media is arguably not very proactive on seeking stories that focus on the environment. Environmental information or discussion is not being actively disseminated and public opinions are only usually requested when there is newsworthy “drama” involved such as natural disasters or controversial protests. There is also a certain amount of “laziness” that is present among some journalists in making efforts to conduct in-depth research on a particular issue. The author was unable to research further into this because she was unable to get in touch with but the author wishes to acknowledge it nonetheless.

8.2.4. *Environmental Knowledge & Awareness of Environmental Issues*

- The Malaysian public has grown more aware of environmental issues, but the challenge has been to translate this awareness into action, especially in daily practices.
- Environmental information, while provided to the public through the reports mentioned above is not actively disseminated to the public in the form of other media, such as video clips, documentary, or on social media.
- Civil servants in the Government are predominantly not environmentally sensitized. Interactions with the author tended to result in comments on

efforts being made to implement “green” initiatives, but the idea is more often limited to the concept of recycling or of keeping neighbourhoods clean.

- Most enforcement officers in the DOE are civil or chemical engineers. They are more accustomed to dealing with environmental issues from a technical and scientific approach, and are thus not currently expected to be knowledgeable or experienced in engaging with the public.
- The DOE runs programmes to create environmental awareness, but has not been able to obtain further information on whether the programmes have been effective or not in communicating the DOE’s environmental message to the intended audience.
- Information on the environment that is provided by the DOE through its Environmental Quality Report are also mostly technical, and does not help to explain what the consequences of a particular environmental degradation would be on the public. For example, if rivers are reported to be more polluted, how it would affect the surrounding communities and what would the DOE’s next step be in addressing the matter are not clearly explained or elaborated to help inform the public. While the Annual Report is produced in print (and now in digital form as well) to literally report on the DOE’s programmes and activities over the past year, it does not directly correlate with the information provided in the Environmental Quality Report, and there is still no follow up reported on whether the implemented programmes have been effective or not.

8.2.5. *Culture*

- Although the cultural practices of Malaysians are rapidly changing in urban areas, especially in big cities such as Kuala Lumpur, Malaysians still generally prefer to keep their opinions to themselves and avoid conflict. This would present challenges in obtaining their participation in public forums where people with opposing views may attend. As a result, only those who are very vocal or have an interest at stake will participate actively, which would not necessarily be representative of everyone else's point of view.
- The problems that may arise in avoiding confrontation is that people could also be careful with what they say for fear of offending someone who they may regard as being a higher status or who they are indebted to. This would present challenges in understanding what the public is really thinking and what do they actually want.
- There continues to be an observed lack of openness in Malaysia's cultural practices and in general public discourse, which may arguably be due to the power dynamics present in Malaysian culture and society.

8.2.6. *Ethics*

- Malaysians may be more aware of environmental issues in recent times, but they have been reportedly unable to translate their awareness into action.
- The Malaysian public generally appear to lack concern over wellbeing of the environment. Even those who are educated on the issues and are aware of the consequences do not take much initiative to do anything that helps. Both

children and adults in some areas of Malaysia, for example, can still be seen openly throwing garbage out on the road or in the river without hesitation or remorse.

- Corruption is an issue that some feel still exists in Malaysia, thereby influencing their level of trust and confidence in the Government's promise to make efforts of protecting the environment. The actual level of corruption is unknown, but the country was ranked at 50 (out of 175 countries) in the 2014 Corruption Perceptions Index by Transparency International[268]. Its rank in the 2015 results of the index has dropped to 54 (out of 168 countries)[269].
- Malaysian society would still need to learn how to use information responsibly as they appear to be lacking digital literacy.

8.2.7. *Public Engagement*

- Although the Government has expressed an amount of political will in moving towards being more citizen-centric and engaged with the public, the relationship between the Government and the Malaysian public at times appears to be tense and arguably riddled with suspicion. In relation to environmental information and public participation, expressions of public distrust and dissatisfaction with the Government were seemingly heightened in recent issues of controversy that involved the Lynas Advanced Materials

[268] "The Corruption Perceptions Index ranks countries and territories based on how corrupt their public sector is perceived to be. A country or territory's score indicates the perceived level of public sector corruption on a scale of 0 (highly corrupt) to 100 (very clean)". Malaysia's 2014 score was recorded at 52, which is considered average, and places it at 50 in the ranking.
[269] Scored at 50, which is slightly lower than the score of 52 from the 2014 results.

Plant (LAMP), the Government Services Tax (GST), and the East Klang Valley Expressway (EKVE), which may have been due to a lack of thorough and effective public engagement, and had thus received strong dissent as well as protests by groups of citizens and civil societies.

- Public participation processes and procedures remain as one-way forms of consultation. From the author's personal observations, DOE enforcement officers are not trained to communicate in ways that encourage peaceful dialogue among laymen participants or to facilitate discussion between experts and non-experts.

To address the deficits that were identified, the author has constructed a proposed framework for enhancing Malaysian public access to environmental information and participation in environmental decision-making, which the author named ALAMRAKYAT[270]. The framework was designed to provide a holistic approach to the systemic challenges that Malaysia experiences with regard to this specific aspect of the country's environmental governance. It was constructed in such a way as the overlapping and complex issues identified by the author could not be solved by patching up only specific problems, such as through providing more environmental education, which has appeared to be the main solution proposed by various other academics as well as NGOs. The author believes that the challenges faced by Malaysia would require improvements to be

[270] The name of the framework, ALAMRAKYAT, was created by the author from combining the word "alam sekitar", meaning "natural environment", and "rakyat", which translates to "citizens" or "the people". "Alam" as a word on its own can also be understood as nature or environment in the sense of space, such as the word "alam maya", that is "cyber space". When these two words are combined together, the term is meant to signify "the people's environment", which the author believes as delegating to the Malaysian people an amount of power, responsibility, and ownership of the environment.

made in several problematic areas that are connected to one another. The author attempts to provide a strategic template in the form of the framework to resolve some of the deficits in access, but it could be further improved through collaboration with other actors. Most importantly, the author would like to emphasise that although this framework was initially designed for the Government to implement, it is equally important for all actors (i.e. civil society, industry, academia, and others) to be involved in implementing it together. Indeed, upon review of this framework, the author strongly opines that it can serve as a guiding template or blueprint for organisations outside of Government that may be interested in achieving the same objective.

In the next section, the author explains the design, structure and content of the framework. The visual form of the framework can be referred to in Figure 39.

8.3 RECOMMENDATIONS

8.3.1. *Framework for Enhancing Public Access to Environmental Information and Participation In Environmental Decision-making (ALAMRAKYAT)*

As a rapidly developing country in transition towards becoming a high-income, developed nation that is inclusive and sustainable, Malaysia would require a tailor-made framework specifically targeted towards addressing the deficits that were identified while also considering its unique cultural context. The framework recommendations were prepared based on a fusion of the author's

own original ideas, guidance provided under the Principle 10 implementation guidelines and the Aarhus Convention, and inspired by best practices found in other countries, as well as the author's learning experiences and personal observations from studying at Imperial College and living in London.

8.3.1.1. ***Design of the Framework***

The framework is visually designed as a house, with columns, building blocks and other elements that serve to provide the structure and purpose of the "house" i.e. the framework. The visual representation of the framework should be read from bottom to top, similar to the process of building up a house – from the ground up. However, when reviewed from top to bottom afterwards, one should be able to see how the elements of the "house" function and fall in to support the entire structure. The author's guide and explanation of the framework is elaborated in the next section (please refer to the visual representation of the framework in Figure 39 to gain a better understanding of these descriptions). The author selected the "house" design to represent the framework, as the process towards enhancing access to information and public participation is regarded by the author as a building of blocks that needs to be done from the bottom up, involving various actors and several techniques. Just like the construction of a house, the framework needs to be based on a strong foundation and pillars, with a structure and custom design that fits the needs of its tenants. Each of the key elements contained in this "house" will be further described below.

8.3.1.2. ***Content of the Framework***

- From the ground up (to be read from the bottom of the framework's visual structure):

  - **GOOD GOVERNANCE AS THE FOUNDATION OF THE HOUSE**

    The framework "house" needs to be built on principles of good governance (as addressed in Chapter 3, which has explored what good governance should comprise of) in order to provide a sound foundation for its pillars. Without being strongly grounded on some standard, the pillars may wobble and fall, and the framework would not be able to effectively achieve its objectives. It should thus be made up of transparency, inclusivity, equal treatment, integrity, etc., which are cemented together to become the solid foundation that forms the basis of the framework.

  - **PILLARS WITH STRATEGIC MEASURES AS THE FRAME OF THE HOUSE**

    Built directly on top of the foundation are the pillars that form a strong frame, which provides the core structure of the house. Each pillar is built upon strategic measures that are followed by examples, which ought to be performed so as to deliver the objective of each pillar (the significance of each of the framework's pillars are summarised in subsection 8.3.1.3., and further elaborated with strategic measures and examples in Table 5).

- **CULTURE AS THE SOUL OF THE HOUSE THAT MAKES IT A HOME**

  The culture is located at the centre of the house, and serves as the heart and soul of the home. The idea behind this is that culture is the way of life, and sets the ecosystem in which the framework will function to deliver its objective. The “soul” of the house reminds us that it is important to take into consideration the unique cultural traits of Malaysia to implement the framework effectively. However, it is also an element that the framework will inevitably change in the process as some cultural aspects of Malaysian mindsets, attitudes and lifestyles may be environmentally destructive, and hence need to be improved so that a culture that promotes environmental citizenship and leadership can be developed. As seen in the visual design of the framework, “Culture” is depicted as extending across the framework and over its pillars. This is to represent the omnipresence of cultural influence across the target areas of the framework’s pillars. The strategic actions for each pillar should be moulded to fit into Malaysian culture so that it becomes acceptable and applicable for the country, but its achievements would, at the same time, contribute to cultural changes in Malaysia. This process is visually represented in the passing through of the yellow arrows towards the “Output”.

- **OUTPUT AS A BUILDING BLOCK THAT ADDS DIMENSION TO THE HOUSE**

  When the strategic actions of each pillar are achieved, the pillars stand strong to support the output, which is represented as the building block that adds dimension to the structure of the house. The expected outputs are as follows:

- **Organisational & legal transformation**
- **Citizen-centric service delivery**
- **Evolved mindset**
- **Enhanced talent & skills**

- **OUTCOME AS A BUILDING BLOCK THAT STRENGTHENS AND CHARACTERISES THE HOUSE**

  The achieved outputs are then expected to result in an environmentally educated, encultured, ethical & informed Malaysian citizenry that is effectively engaged by an environmentally open, inclusive and responsible Government.

- **OBJECTIVE AS THE OVERARCHING CEILING THAT UNITES ALL ELEMENTS OF THE HOUSE**

  The success of the achieved pillars, outputs and outcome of the framework will ultimately lead to fulfilling its objective, which is to enhance Malaysian public access to environmental information & participation in environmental decision-making. This is represented as the ceiling of the

house, which fuses all the building blocks and pillars with the firm support of the foundation, in order to form the topmost element of the inner structure of the house.

- **NATIONWIDE GOAL AS THE ROOF THAT PROTECTS & SHELTERS THE HOUSE**

  The objective of the framework will lend support and contribute to the nationwide goal that reflects what Malaysia envisions to achieve in year 2020 and beyond, which is to become a high-income, developed nation that is inclusive and sustainable. The nationwide goal is represented as the roof that protects and shelters the house, because the author regards its success as an achievement that could lead to further sustaining and improving the framework in the future. In other words, not only could the strive towards achieving Vision 2020 garner support by the Government and the public for such a framework, but reaching the nationwide goal of Vision 2020 could lead to further developing the framework and its applications because its objective may become more significant to the country's continuously sustainable development. This aspect of the framework, therefore, displays that it is in line with the country's overall vision for the future and recognises the benefits that could be obtained from the country's achievement of Vision 2020.

8.3.1.3. *Summary of the Framework's Pillars*

CULTIVATE ENVIRONMENTAL CITIZENSHIP & LEADERSHIP

This pillar seeks to cultivate the seeds of environmental citizenship and environmental leadership in Malaysian society. Here, the author argues that in order to process the information provided to them regarding their environment and to participate effectively in environmental decision-making, Malaysians need to be equipped with some knowledge and awareness of environmental issues, as well as develop a sense of responsibility and ownership towards the environment. They should gain a better understanding of how the wellbeing of the environment is essential to their own wellbeing as individuals, communities, and as a nation, and this should be integrated into their identities as Malaysian citizens.

REVIEW ORGANISATIONAL STRUCTURE & LEGAL MECHANISMS

This pillar suggests that changes need to be made to the current organisational structure of the Malaysian Government and that some laws need to be reviewed in order for the public to gain access to environmental information and participate in the decision-making process.

DEVELOP CAPACITY BUILDING & HUMAN CAPITAL

This pillar emphasises on the need to develop the skills, knowledge and capacity of civil servants, political leaders and policymakers in the Malaysian Government, specifically towards bettering access to environmental information and improving public participation in environmental decision-making.

OPTIMISE USE OF ADVANCED TECHNOLOGY & ICT

This pillar promotes the adoption of technology and ICT in keeping up with communication advancements that could be used by the Government to not only actively disseminate information on the environment to the public but to encourage them to provide their responses and suggestions on environmental issues as well as on any development plans that may affect the people's environment.

BROADEN NETWORKING AT LOCAL, NATIONAL & GLOBAL LEVEL

This pillar places importance on Government engagement with the Malaysian public at the community level and national level, while collaborating with regional neighbours and international allies to gain a deeper understanding of how to improve public access to environmental information and participation.

INCULCATE ETHICS & VALUES

This pillar is aimed towards inculcating a sense of care and responsibility over the environment and the wellbeing of the nation as well as the future generations to come. The idea here is that although it would be helpful to utilise advanced technology, develop talented experts and be able to effectively engage with the public, the objective of the framework would not be complete without instilling a sense of purpose behind all these actions so that it does not only become something good to do for the development of the country, but something that is virtuously right as well.

The next several pages display Table 5, which contains the strategic measures that could be implemented under each of the pillars mentioned above. The author has also included several examples that may serve as ideas or suggestions for implementing the strategic measures.

Table 5: THE ALAMRAKYAT FRAMEWORK PILLARS WITH STRATEGIC MEASURES & EXAMPLES

PILLAR	STRATEGIC MEASURE	EXAMPLES
CULTIVATE ENVIRONMENTAL CITIZENSHIP & LEADERSHIP	1. Develop a Malaysian-specific concept for environmental citizenship that emphasises sense of patriotism, unity, and relates to concept of sustainable development.	• Suggested use of a term created by the author is "Bangsa Lestari", which essentially means "Sustainable Nation or Sustainable Citizens"[271] as a way of adapting the term "environmental citizenship" to one that Malaysians can relate to in their own language. Environmental leadership can be translated into "Kepimpinan Lestari", that is "Sustainable Leadership". • Collaborate with environmental NGOs, schools, universities, and environmental experts on developing programmes to introduce the concept of "Bangsa Lestari" to Malaysians. • Engage with Malaysians to introduce concept of "Bangsa Lestari" and ask them to provide suggestions on what they think Malaysians can do individually and collectively

[271] The word typically used for citizenship in Malaysia is "kewarganegaraan", while the word environment is "alam sekitar". Combining both would produce a term in the Malay language that might be too long, strange or unappealing. The author, therefore, decided to use the term "bangsa" after considering that it means "nation" or "nationality" and thus carries with it a tone of national patriotism, which tends to be a uniting element that can bring Malaysians together (i.e. no matter what ethnicity or religion we hold, we can be united in our common love of country because we are all Malaysian). The reason for using "lestari" (meaning "sustainable") is because Malaysia, as a developing country, may prefer to seek balance between all pillars of sustainable development. Thus the idea of having a desire to develop better skills, gain higher education, earn more income, and contribute to bettering community welfare should also incorporate a sense of ethical and responsible treatment towards the environment as well as the belief that one should care and defend the environment as one would care and defend the country.

		become a better “bangsa lestari”. The author suggests use of television, Internet and especially social media to engage with Malaysian public. Results can be obtained through surveys, feedback forms and suggestion boxes. Make these available in public places accompanied by “bangsa lestari” posters to explain how citizens can contribute to bettering the environment. • Organise an official launching ceremony for the concept of “Bangsa Lestari”, and get the country’s leaders to be involved in pledging to become a “pemimpin lestari” (sustainable leader). This is aimed towards raising political will and encouraging leaders to think more about what they can do in their role to champion environmental sustainability in carrying out their duties as a “pemimpin lestari”.
	2. Introduce more innovative methods to the way citizens learn about the environment.	• Facilitate collaboration between schools/universities with environmental NGOs, Government agencies dealing directly with environmental issues and industries that adopt sustainable business models or environmental-friendly principles. An example would be a school trip to Green Tech Malaysia to learn about the Green Malaysian Plan 2030. Activities can be interactive and allow students to provide their suggestions on how to improve the Green

		Malaysia Plan. Such activities can be inspiring and encourage the youth to try to think of how they could contribute towards this national plan. This is hoped to promote a sense of environmental awareness, participation, and to make the youth feel that their voice is heard. • Invite locals (both in city and rural areas) to attend a screening of a documentary or film surrounding an environmental issue, such as climate change, sustainable fishing, and deforestation. The film screening can be complemented by a panel discussion on the issue or by having “Q&A booths”, where people can ask a question on environmental issues. The Q&A booths could allow locals, especially those from the rural areas to approach experts and ask the questions they may have on environmental issues in a setting that is casual and not intimidating. The booths can also serve to collect their comments or ideas for environmental improvement. Their stories can be shared and reported to the Government, for further action.

		• Public institutions of higher learning can collaborate with industries that have "green" initiatives or aspects in their business, such as by holding talks in between lectures[272], to share with students about how their job contributes to environmental sustainability. This could be beneficial to industry players who might want to be involved in Corporate Social Responsibility (CSR) activities, or obtain ideas and opinions from university students (i.e. turn the participation into a crowdsourcing activity that can help to improve their business). These events are targeted towards getting students exposed to the job opportunities out there and the idea of working in various fields that can contribute to improving the environment. It can also be a good opportunity for networking.
	3. Enhance collaboration with environmental NGOs to develop awareness-raising programmes.	• Organise networking session in "santai" (meaning "informal" in Malay) settings, where NGOs could be invited to attend and engage in dialogue on environmental matters that concern them the most. Follow up the sessions with workshops to create programmes, and meetings to discuss progress of efforts being made.

[272] Such as the CEP Lunchtime Seminars and Policy Seminars organised at the Centre for Environmental Policy, Imperial College London.

		• Provide opportunities for funding to NGOs that wish to carry out programmes promoting environmental citizenship and leadership. The programme activities and outcomes should be monitored, and progress reported.
	4. Engage with the public to formulate and implement the Malaysian Environmental Bill of Rights.	• Conduct polls, surveys and public participation exercises to ask the public their opinions on what should and should not be included in the national environmental bills of rights. Then, formulate the bills of rights and implement it nationally. An example of this could be seen in Ontario's Environmental Bill of Rights implemented in Canada (Environmental Commissioner of Ontario 2016)[273].
REVIEW ORGANISATIONAL STRUCTURE & LEGAL MECHANISMS	1. Formulate a roadmap towards improving access to environmental information that will eventually lead the country towards implementing a Federal law that grants the public with access to environmental information.	• Efforts can begin in small steps if the Government is of the opinion that the country is not politically or structurally ready to commit to the big step – that is of implementing information laws and meeting information requests from the public. Preparations can be made prior to enforcing such a law by designing a roadmap that functions to establish the necessary organisational structure and resources needed to providing improved access to information. After the Government has gained more experience and thus more confidence in managing all its information and meeting

[273] Refer to the following link to view a digital booklet providing information on the Ontario's Environmental Bill of Rights: <http://media.assets.eco.on.ca/web/2016/04/The-Environmental-Bill-of-Rights-Your-Environment-Your-Rights.pdf> [Accessed 20 April 2016].

		requests for information in an organised and timely manner, the law can be introduced to further protect the rights of the Malaysian public to obtain environmental information. • Part of the preparation process in the roadmap may require, but is not limited to, deciding on a clear definition of exemption criteria for access to information (e.g. national security and protection of individual privacy), supplemented by appropriate guidance for application, the time frames that should be applied for providing information, and eventually a solid legal foundation upon which to build an information system and ensure effective flow of data. • The conceptual ALAMRAKYAT framework could be adopted to provide a more holistic approach in understanding what is needed to ensure access to environmental information and to understand where access to information fits in the bigger picture of the country's development plans.
	2. Review generalised and obscure use of certain terms that appear in legislation to establish clear definitions and functions.	• Formulate a clear definition of "environment", "environmental information" and "environmental education", for example, in laws that mention these terms. The Government's exact role in providing and/or disseminating them should be made clear so that authorities in charge

		understand the responsibilities expected of them, and the public also knows what is supposed to be made available to them under the law. • Refine the broad terms adopted in laws that have control over access to environmental information, and interpret them narrowly, such as the meaning of "official secret".
	3. Create a Federal Office of Information (which will be different from the current function of the Department of Information under Malaysia's Ministry of Communications and Multimedia[274]) and appoint information officers.	• The appointment of information officers can be done at every level of the Government, in every department of every Ministry. Their main function would be to organise all the information (both confidential and public) that is held by the Government at Federal and State level. • The UK's Information Commissioner's Office is an example is an independent authority that was set up to uphold information rights. It responds directly to Parliament and is sponsored by the Ministry of Justice. Its website provides the public with clear and basic advice on how to request information, and the differences between the public's rights

[274] According to its website, the Malaysian Department of Information's mission is to "Translate and promote the policies and national agenda to ensure it is understood, supported, appreciated and assimilated/cultivated/practised by the citizens through information programmes". The department does not appear to be responsible for managing information requests or for organizing between confidential information and public information held by the Government. It seems to function more towards disseminating information of the Government's policies, national plans, and so on. Details on this department can be referred through the following link: <http://www.penerangan.gov.my/index.php/en/about-jpen/organisation-profile/vision-and-mission> (Department of Information Malaysia 2015) [Accessed 30 Jan 2016].

		under the UK's Freedom of Information Act 2000 and its Environmental Information Regulations 2004[275]. • An Office or Department of Electronic Government (e-Government) could also be created either independently or under the Office of Information to focus specifically on e-Government services as well as how to make information provided online presentable, accessible, user-friendly and in a form of language that laymen can understand. For Malaysia, such as office could also function to provide advice to Government officials and Ministries on how to use online tools for communication and could help to arrange for capacity-building workshops or courses for civil servants to help improve not only their computer literacy but also their digital literacy. An example can be seen in the United States Office of E-Government & Information Technology. The Office is headed by the Federal Government's Chief Information Officer (CIO). The Office functions to develop and provide "direction in the use of Internet-based technologies to make it easier for citizens and businesses to interact with the Federal Government, save taxpayer dollars, and streamline citizen participation" (The White House Office of Management and Budget 2016). Japan has

[275] More details on the UK's Information Commissioner's Office (ICO) can be referred to via the following link: <https://ico.org.uk/> (ICO 2016) [Accessed 16 Nov 2015].

		also moved towards establishing e-Government initiatives and has appointed a Government Chief Information Officer[276].
	4. Establish a Centre for Environmental Information and Public Engagement on Environmental Matters	• This centre will function in coordination and collaboration with the Federal Office of Information and the Ministry of Natural Resources and Environment to manage all information held by the Government that focuses specifically on matters related to the environment. The type of information to be managed will be determined after deciding on what should be regarded as "environmental information". The Centre also functions to engage with the public on environmental matters and find out how public participation in environmental matters can be further improved. Thus, the author proposes the Centre to consist of two main units – that is the Office of Environmental Information and the Office of Public Engagement on Environmental Matters.

[276] More details on Japan's e-Government initiatives can be accessed through the following link: <http://www.e-gov.go.jp/en/e-government.html> [Accessed 10 March 2016].

		• The environmental information officers appointed in this Centre should regularly collect and update relevant environmental information, including information on environmental performance and compliance by industrial activities that affect the environment. • Wherever possible, the information should be made available to the public online (and in print if necessary). Information that cannot be made available to the public must be organised separately. Reasons for why the information cannot be made public should be noted or labelled on the document or folder, so that this reason can be provided to the public if the information is ever requested. This can arguably improve efficiency in providing information, and allow for more open communication and show of transparency to the public. • In the United States, the Office of Public Engagement serves to open two-way dialogue with the help of a "receptive team dedicated to making [the American communities'] voices heard within the Administration, and even more importantly helping their concerns be translated into action by the appropriate bodies of the Federal Government". The Office creates and coordinates "opportunities for direct dialogue between the Obama

		Administration and the American public, while bringing new voices to the table and ensuring that everyone can participate and inform the work of the President" (The White House 2016). For Malaysia and in the environmental context, the Office of Public Engagement on Environmental Matters will be introduced into the structure of the Centre to specifically coordinate engagement activities on environmental issues with the public, especially with environmental NGOs and environmental youth groups such as in schools and universities, to provide information and organise talks that could be educational to these groups. The Office can also function to provide the information prepared by the Office of Environmental Information on government policies, programmes, and initiatives relating to the environment. This can be done through various means such as online, social media, monthly magazine, e-mail blasts, newspaper articles, television infomercials, engagement sessions, gathering with the media, and many more.

		• In Canada's Newfoundland Labrador, the Office of Public Engagement (set up at the level of the provincial government) functions to acquire feedback directly from the public regarding policies, programmes, and other government initiatives. This Office is comprised of a Public Engagement Branch, Voluntary and Non-Profit Engagement, Youth Engagement, and the Access to Information and Protection of Privacy Office[277].
	5. Enhance the role and functions of the DOE.	• The DOE should be given a more prominent role and clout in managing environmental issues in the country. In this regard, the DOE should be provided with more resources such as in environmental monitoring equipment and employees that are diverse in their environmental knowledge and skills (i.e. not be made up primarily of engineers). Information officers could be appointed to manage environmental information, and public engagement officers could be appointed to develop more effective methods of public participation for Malaysians. Engineers should not be appointed to lead administrative tasks, but should be made useful in areas concerning their specialised skills.

[277] For more details, the website of the Office of Public Engagement can be accessed through the following link: <http://www.ope.gov.nl.ca/> (Government of Newfoundland and Labrador 2016) [Accessed 15 March 2016].

	6. Improve EIA procedures that involve public participation.	• Comments made on EIA reports should receive response (i.e. feedback) from the authorities in a timely manner. An explanation should also be provided on why certain suggestions were accepted or not. In addition, decisions that public authorities made should be informed to the public as soon as possible after the decision, and before any activities take place. According to the Guidance Note on the Aarhus Convention for Public Authorities that was prepared for Malta (Makuch 2009), it is also crucial to explain why the decision was made: “Notification should also explain that it was not an arbitrary choice. It is very important to explain why this particular option has been selected, and what its advantages and strong points are” (p. 37). • Consider expanding the realm of public participation in EIA procedures to beyond “review and comment” of EIA reports, such as through opinion polls, small group sessions, working groups, and forums hosting question and answer sessions with experts and representatives of the planned project.

	7. Abolish or loosen existing laws that restrict the media and public's ability to freely access an share environmental information.	• The SA 1948, OSA 1972, and PPPA 1984 could be a few of the laws that the Government may wish to consider abolishing or reviewing to make further improvements. • A Federal law that provides the public with freedom of information, or more specifically, a right to access environmental information could be introduced. The law should narrowly define the types of information that would not be suitable for public release and it should also not require applicants to state the reason and purpose for requesting information from the Government, as this part of the law should be made voluntary.
DEVELOP CAPACITY BUILDING & HUMAN CAPITAL	1. Train civil servants on environmental administration.	• The National Environmental Research and Training Institute under Japan's Ministry of Environment provides basic policy training on environmental matters for officials in environmental administration. The Malaysian civil service could also receive such training by inviting speakers from universities, local authorities, industries, NGOs, Ministry of Natural Resources and Environment to share their specialized knowledge in the environmental field, explain the Malaysian legal system and frameworks for the environment, and provide further information on the most recent environmental operations. Environmental case studies can be used to improve participants' problem-

		solving skills through debates on administration issues and cases of environmental problems in various local government branches. They also play an extremely important role in sharing information among environment-related departments across the country. • The Environment Institute of Malaysia currently offers environmental training programmes, but is more focused on those that are needed by DOE employees. The courses appear to be technical in nature. • Civil servants (or information officers) should also be trained on how to manage and organise environmental information, before implementation of information laws.
	2. Foster a culture of open government.	• Commit to promoting increased access to information and disclosure regarding activities performed by the Government at every level of the Government. • Deepen public participation in developing, monitoring and evaluating government activities.

	3. Create an Institute for Environmental Citizenship and Leadership	• This institute will function to train civil servants, politicians, and any members of organisations, institutions, or NGOs by providing courses and seminars concerning the environment and sustainable development, so as to create awareness on the environmental challenges being faced in Malaysia, how to become a more responsible environmental citizen, what practical skills are needed to promote environmental sustainability in their areas of profession, as well as ways to implement environmentally sustainable practices in work and daily life. It should be made mandatory for civil servants and politicians, while others can pay a reasonably-priced fee to attend the courses, which will be made available in both Malay and English. The courses could be taught by local environmental experts, international fellows or visiting professors, NGO representatives, industry leaders, Government officers/civil servants with experience in environmental matters. • Field trips could also be organised to bring participants closer to real examples, such as to visit villages and speak to the people to learn from their local knowledge and experiences in environmental issues, such as the Orang Asli who are knowledgeable on rainforests, and a visit to a solar power plant to understand how it functions.

		• The Institute could also be used for conducting open dialogues on environmental problems and solutions (be it intellectual and academic in nature or in an informal and entertaining form) for the public to attend for free, and participate by providing their ideas. Public comments should be allowed to be expressed during these sessions, to encourage a free flow of ideas and constructive criticisms, but the appointment of an experienced moderator as well as the presence of participation experts would be highly recommended, to avoid heightened emotions that may lead to conflicts and safety risks.
OPTIMISE USE OF ADVANCED TECHNOLOGY & ICT	1. Develop an online system to process requests for information.	• "e-SIC"[278], which is implemented in Brazil, allows citizens to request information from all federal government agencies, monitor the treatment of their request by the responsible agency, and receive responses through e-mail (with documents attached). Users may also file an appeal if they do not agree with the response or if the request was denied, and are given the opportunity to present their complaints or provide feedback as well to enquire on any

[278] e-SIC is an online portal that was launched in 2012 on the same day Brazil enforced its Law on Transparency and Access to Public Information. The e-SIC portal can be referred to the following link: <http://www.acessoainformacao.gov.br/> (Government of Brazil 2016) [Accessed 7 March 2016] but it is not available in English at the time of writing (March 2016). Details of the portal can be referred to the Open Government Guide website: <http://www.opengovguide.com/news/brazil-has-developed-an-online-platform-to-process-information-requests/> (Open Government Guide 2015) [Accessed 3 March 2016].

		information regarding their requests. The system is reported to facilitate the citizens right to access public information but also functions to help the government monitor whether federal agencies respond to requests within the timeframe and deadlines provided by the law, along with the quality of responses (Open Government Guide 2015; UNEP 2015a).
	2. Revise Government websites/online portals to make information better accessible and more presentable to the public.	• Standardise the format for all Government websites such as the home page (i.e. the first webpage that is seen upon entering the website), which must have the contact information at the bottom of the page, or in one of the drop-down menus. These are simple changes, but are effective as they save people time and effort in searching for a department or Ministry's contact information on different webpages. • Revise the design of the websites so that they are not too cluttered or wordy. Simplicity is key in ensuring people can obtain the information they are looking for on the website in an efficient manner[279]. • The information available on the websites need to be

[279] Refer to the website of the UK's Information Commissioner's Office for an example of how a webpage can be made simple, clear, concise and information is presented in a well-organised format: <https://ico.org.uk/> (Information Commissioner's Office (ICO) 2016) [Accessed 16 Nov 2015].

		presented in clear and easy-to-understand language that laymen can comprehend. For example, procedures for how to submit complaints on environmental-related issues should be displayed in a style and format that is easy for the public to understand and also be visually pleasant to read[280]. • Broken links should be replaced with those that function and reports that the public can access should be made available to download.
	3. Improve the Government's outreach and presence on social media as well as interactions with the public online.	• In the United States, the White House organises the "Big Block of Cheese Day"[281], which is an annual online public engagement activity carried out through social media – Twitter, Facebook, Instagram and Tumbler (#BigBlockOfCheeseDay). A Twitter Live Chat on Periscope was also involved in the programme. The activity allows Americans to pose questions directly to White House officials, cabinet members, lawmakers and "special guests", such as the First Lady and the Vice President. The

[280] Ibid.

[281] The "Big Block of Cheese Day" was reportedly inspired by President Andrew Jackson who hosted an open house for citizens and policymakers in 1837, featuring a 1,400-pound block of cheese. This modern version of the online engagement activity was then popularised by "The West Wing" (an American television show) where the fictional government administration hosted Big Block of Cheese Day to meet with underrepresented interest groups (Miller 2016; Huffington Post 2014; Saenz 2016; White 2016). The White House adopted the idea and began organising the online engagement activity where the public could directly communicate with the Government on several topics. More details of the event can be accessed through the following link: <https://www.whitehouse.gov/blog/2016/01/08/big-block-cheese-day-back-again-gouda-time> (Miller 2016) [Accessed 20 March 2016].

		topics of discussion were organised by various themes and through different time slots. For example, 2:00pm-3:00pm on Climate, Energy and Conservation with the Secretary of Energy, Department of Interior, Environmental Protection Agency, Council on Environmental Quality, and other relevant key Government officers, while 3:00pm-4:00pm was dedicated to Science, Technology, Engineering and Math. • In the case of Malaysia, such public engagement activities can be carried out, for example, through "teh tarik"[282] sessions conducted online. In the context of environmental information and public participation, the relevant departments and Government agencies that deal with environmental issues could hold a monthly or annual "teh tarik" session online. The topic, timeframe, and official figures involved could be narrowed down in the beginning, to test the response of the public and so that responsible officers and leaders can adapt themselves to participating in such an activity. For example, a monthly online session where the public could ask questions for 30 minutes to two public officials from the Ministry of Natural Resource and Environment, regarding the topic of haze and air pollution in

[282] "*Teh tarik*" means "pulled tea" in the Malay language and refers to a popular Malaysian drink, usually served hot. Drinking *teh tarik* is commonly associated with casual meetings or friendly gatherings between groups of friends to catch up and/or discuss the latest news.

		Malaysia, through Facebook (in writing) or Periscope (live video). Eventually, this can be expanded to include other Ministries and agencies, while a special session with the Prime Minister could be conducted annually.
	4. Enhance interactivity and communication of the public on environmental matters through use of mobile apps and Internet-based tools.	• Develop apps, games, and other online tools/programmes that provide fast environmental information, such as the air pollution index, or that serve to promote public participation in the decision-making process, such as tweeting the availability of an EIA report for public review or sending subscribers a discussion topic involving the planning of a mega project in the country. • Introduce apps that provide realtime information on environmental-related conditions that extend beyond weather, such as tide times, air pollution index, and so on. Make these apps interactive by linking them to social media and allowing the public (as users) to provide feedback for improvement. This could also greatly improve how such basic but important environmental information can be presented in a way that the public can understand. • Create an environmental reporting app that would allow members of the public to take pictures of an environmental violation, such as illegal open burning, accompanied by

		time, date, and location where the violation was spotted. The DOE could make a checkmark or respond to confirm that the issue is being dealt with. An example can be seen in the app that was launched by the the New South Wales Government in Australia, which allows anyone to report polluting activities that involve smoky vehicles, littering from vehicles, and noisy exhaust[283].
BROADEN NETWORKING AT LOCAL, GLOBAL & NATIONAL LEVEL	1. Coordinate with relevant Government bodies, NGOs, citizens (and external/international aid if necessary) to implement Emergency Preparedness and Response Systems.	• Enhance and adopt the examples that were implemented from the Kemaman flood model, but expand the collaboration further to include MetMalaysia, neighboring countries (such as by agreeing to alert each other's nations of known natural disaster that might occur, which both countries may experience), disaster experts, architects (to design homes and buildings that can better withstand certain types of disasters), and civil society organisations that can help to alert the Government of illegal activities harming the environment and known to exacerbate certain disasters (such as illegal logging that increases runoffs, pollutes the rivers and leads to flooding along river banks).
	2. Foster greater collaboration between	• Outreach initiatives could be carried out with public

[283] Details on the app and how it functions can be referred to at the following link: <http://www.epa.nsw.gov.au/pollution/reporttoepa.htm> (New South Wales Government Environment Protection Authority (NSW EPA) 2015) [Accessed 2 March 2016].

	governments, institutions, civil society organizations, as well as businesses.	universities, such as an Environmental Science Weekend where environmental scientists and researchers from the universities can participate to engage with the public through various activities, such as poster presentations, performances, Q&A sessions, interactive games and competitions, a talk and mingling session over food to discuss the issue of food waste or the difference between organic and non-organic ingredients. • Collaborate with the national museum to hold an annual Environmental Information Day, where the public can attend exhibitions that focus on promoting environmental protection, and educates the public on how they could
	3. Develop regional and international cooperation to promote collaboration and knowledge exchange in implementing Principle 10 pillars.	• Create a regional working group to exchange experience, best practices and relevant knowledge on implementing Principle 10 pillars. • Seek knowledge exchange from UNECE member countries that have integrated and implemented the Aarhus Convention in their national laws and policies to learn how they prepared their country for it, how it is enforced, what resources they use to make it work, and what sort of challenges they encounter in implementing it.

	4. Engage with the media to improve communication and reporting of environmental information to the public.	• Hold an annual engagement lunch. • Create television programmes and talk shows that focus on environmental issues. Invite environmental experts to provide their opinions on a particular issue, such as on how illegal logging damages not only the environment but also human livelihoods. Some television programmes that are broadcasted by the UK's British Broadcasting Corporation (BBC) provide examples of how a TV programme could be formatted in a way that is educational, informative, interesting and entertaining, such as "Trust Me, I'm a Doctor"[284], "Stargazing Live"[285], "Tomorrow's Food"[286], and "Weird Nature"[287].

[284] More information on this programme is available through the following link: <http://www.bbc.co.uk/programmes/b04j9gny> (BBC Two 2016b) [Accessed 20 March 2016].
[285] Details on this programme can be accessed through the following link: <http://www.bbc.co.uk/programmes/b019h4g8> (BBC Two 2016a) [Accessed 16 February 2016].
[286] Information on this programme is available through the following link: <http://www.bbc.co.uk/programmes/b06r3jh5> (BBC One 2016) [Accessed 15 March 2016].
[287] For more information on this programme, please refer to the following link: <http://www.bbc.co.uk/programmes/b03vrspg> (BBC Four 2016)[Accessed 20 February 2016].

	5. Maintain a regular form and frequency of environmental communication with the public.	• The notion of public participation should not entirely revolve around “power distribution” but on the various benefits it could bring to all parties, including those who did not or were unable to get involved in the decision-making process. A more proactive dissemination of key environmental information and alerts could help to keep the public aware or reminded of current issues affecting the environment in their area and/or planned mega projects that they may wish to provide feedback on. Innovative tools and technology such as social media and mobile apps could be used to increase the effectiveness of this effort. An example would be to introduce an app that provides regular announcements relating to environmental decision-making opportunities. • Formulate and implement a “citizen science” programme (such as that seen in the work of OPAL at the Centre for Environmental Policy) that would encourage people to participate in learning more about the environment, and get them involved in sharing the information they have gained with academic researchers and policymakers.

INCULCATE ETHICS & VALUES	1. Promote sense of environmental responsibility and awareness in Malaysian citizens.	• Create the Environment Museum of Malaysia that showcases information and exhibitions relating to the country's environmental history and resources, wildlife, natural resources available in Malaysia, and so on. The museum can be modeled similarly to London's Science Museum, but with an environmental twist. Like the Science Museum, the museum can hold special public engagement sessions to create awareness of a specific environmental issue or to screen an environmental documentary. • Publish a Malaysian children's book series that discuss the environment in Malaysia and the challenges it is facing. The stories should impart lessons to children on the importance of protecting the environment. Some examples of interesting children's books on the environment are Seeds of Change (Johnson 2010), I Want to Go Green! But What Does That Mean? (Dunn 2011) and The Earth Book (Parr 2010), among others.

		• Promote protection of the environment and inform the public on how they could request information or participate in environmental decision-making processes through publishing newspaper articles, disseminating brochures, displaying posters at select locations such as bus stations, and preparing informative videos that are broadcasted through television and online (such as through YouTube). • Engage with communities to implement a tree-planting programme together with Government leaders. For example, the Australian Government's Department for the Environment launched the "20 Million Trees Programme"[288], in which the government works with the community to plant 20 million trees by year 2020, in order to re-establish green corridors and urban forests. The Programme has four strategic objectives, which is to plant 20 million trees, to support local environmental outcomes of conservation, work cooperatively with the community, and contribute to reducing the country's greenhouse gas emissions.

[288] The link to the programme can be accessed through the following link: http://www.environment.gov.au/land/20-million-trees> (Australian Government Department of the Environment 2016) [Accessed 10 March 2016].

	2. Foster environmental ethics and corporate responsibility.	• Reward institutions and organisations that practice a sustainable business model or effectively implement environmentally conscious policies with financial incentives and public praise. • Award recognition to schools, neighbourhoods, religious establishments, community associations, and so on that contribute towards promoting environmental responsibility.
	3. Implement the highest standards of professional integrity throughout all Government bodies.	• Set high ethical standards and codes of conduct for public officials and commit to enforcing robust anti-corruption policies, mechanisms and practices. • Integrate regulations in environmental legislation that protects whistleblowers. • Raise penalty for bribery and other forms of corruption in the public and private sectors.

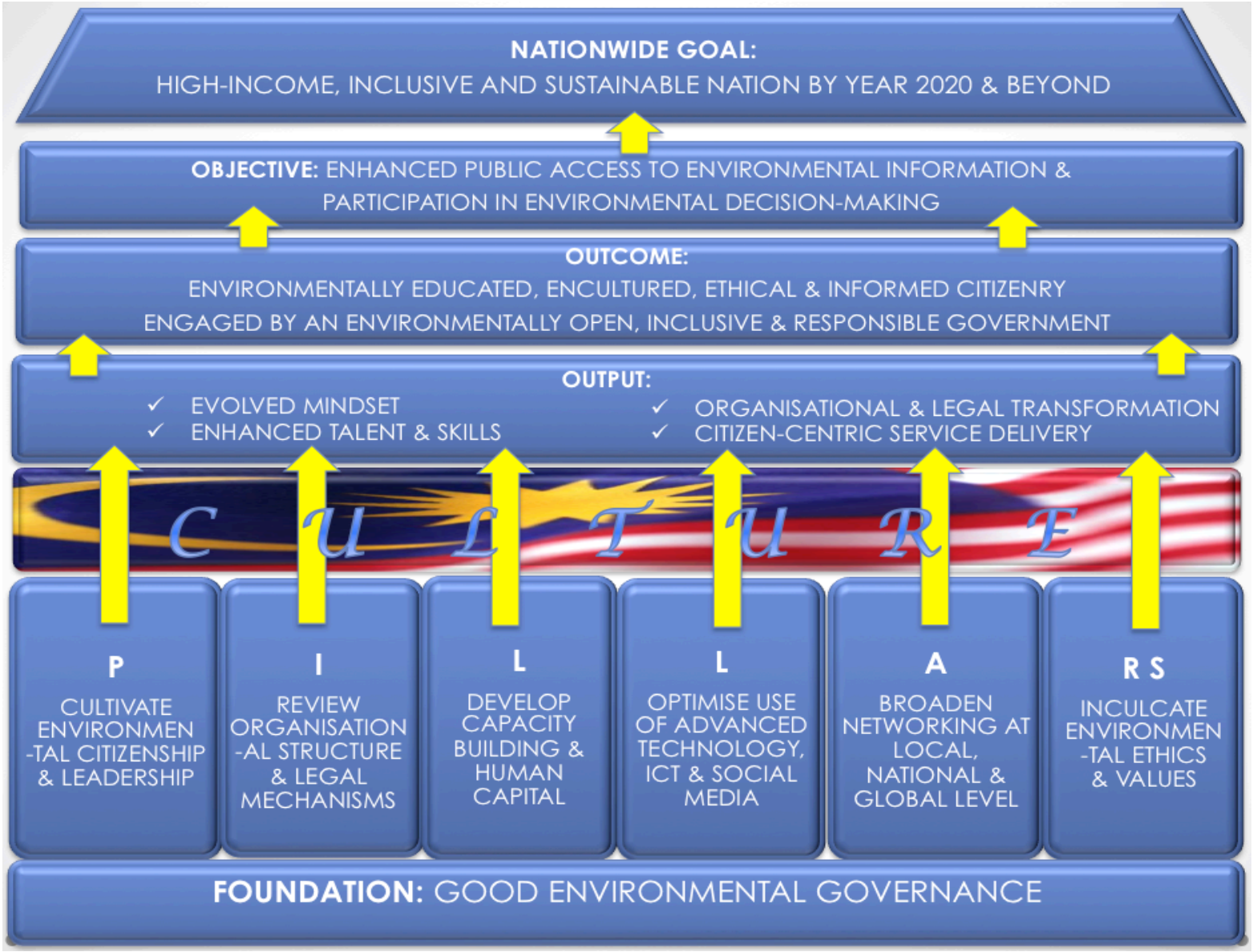


Figure 39: THE ALAMRAKYAT FRAMEWORK

8.3.2. *Suggestions for Further Research*

Due to the limitations in scope and time constraints of this research, it was not possible for the author to address all areas that are related to the research topic. Nevertheless, the author has identified some of the key areas that could be further examined, as listed below:

- The survey that the author conducted could be revisited and relaunched in order to obtain more participation of Malaysians so as to compile responses from a larger sample size.
- More research could be carried out on the public's feedback regarding the channels of information made available to them that the author had discussed in Chapter 5.
- The EIA procedures' "public review and comments" could be further investigated to find out how and how often does the public participate in such a procedure, such as whether they feel they were made fully aware of the availability of an EIA report for review, whether any responses were provided to their comments, and how their comments are integrated into the final decision. Further research could be done to find effective ways for dealing with the inputs received from the public through this procedure.
- Research could also be conducted to find out how much information searched by Malaysians are related to the environment, and what do they do with such information. A follow-up research on the use of social media by Malaysian citizens to seek environmental information could be carried out as well to

investigate how exactly do citizens use social media to obtain information on their environment.

- Further interviews could be done to investigate of the Rare Earth Controversy by interviewing more representatives from anti-Lynas groups and other individuals who live in Gebeng and Kuantan.
- More research and interviews could be carried out to collect information on the experiences of the flood victims and the Government authorities that were managing the situation at the time of the major floods. The State Government of Kelantan could be interviewed to obtain the State's perspective of what happened and whether providing better access to information and public involvement in the decision-making process would be included in their plans for future flood preparations (if any). Meanwhile, some of the residents in Kemaman could be interviewed to obtain their perceptions and feedback of the district's flood model, and what they think could be improved.
- Further research on Malaysia's culture is recommended, as the country is seeing changes in public behaviours and attitudes, especially in methods of self-expression. Therefore, a deeper investigation into the practical examples of how the culture in Malaysia has influenced the ways in which Malaysians participate in environmental decision-making, would be useful towards understanding the relationship between culture and environmental participation.

CHAPTER 9

CONCLUSION

This research was initiated in 2012 and since then, Malaysia has witnessed much change in its environment, caused by weather extremes such as the major floods discussed in Chapter 7, and by human activities, such as the illegal logging that had reportedly contributed to the scale and damage of the floods. These changes have arguably affected the lives of Malaysians, some of whom have raised concerns to the Government and demanded for their voices to be heard (Chapter 6). While Malaysia has adopted measures to protect the environment through laws and policies (Chapter 4), this research exploration has found indications that environmental governance in the country is still lacking meaningful involvement of the people in environmental decision-making processes (Chapter 5). This could arguably be due to the deficits in public access to environmental information, as the author had identified in Chapter 5, and further evidenced through the situations that were examined in the Rare Earth Controversy and the Major Floods of 2014/2015 in Chapters 6 and 7. In addition, some characteristics of Malaysian culture, as discussed in Chapter 4, could also possibly influence how Malaysians respond to and participate in environmental issues. As the author had learned from Principle 10 of the Rio Declaration, the Aarhus Convention and through analysing existing literature, access to environmental information and public participation in environmental decision-making are essential to building the concept of good environmental governance,

which can be regarded as a normative standard, and are placed (along with access to environmental justice) at the heart of environmental democracy (Chapter 3). Indeed, access to information can educate, empower and encourage the public to address environmental issues of concern, and also help to deter the dissemination of misinformation, speculation as well as baseless accusations, while public participation could the allow Government to obtain valuable feedback and ideas, and is thought to generate more than the decision itself, such as increased skills and knowledge (discussed in Chapters 6 and 7).

The Malaysian Government's expressed intentions to transform from its top-down approach and move towards citizen-centricity through promoting open Government, public engagement and inclusivity, among others (Chapters 3 and 4) is a lauded effort that the author fully supports. However, this research has discovered that in the country's current system of environmental governance, the restrictions applied in access to information and the limited opportunities for public participation in environmental decision-making are arguably impeding on the progress of such effort. Even more recently, the reaction of the public towards pressing issues of concern, such as Bauxite mining in Kuantan (mentioned in Chapter 5) serve as a reminder that a more transparent, accountable, and participatory form of environmental governance is urgently needed in Malaysia to help minimise environmental harm, improve public trust in Government authorities, and prevent social unrest. This has become especially important as the Malaysian society is experiencing a transition in terms of education, income, political association, culture, identity, and modes of

communication as well as expression, which have been made further complex with the advent of new technologies and the Internet (Chapter 4).

Nevertheless, this research has not overlooked the efforts that have been made by the Government to provide some amount of access to environmental information to the public, as seen through various forms and methods that were reviewed by the author in Chapter 5. The changes that took place during the course of this research in Malaysian environmental laws and regulations, such as the inclusion of “radioactive materials and radioactive waste” under the Scheduled Activities requiring DEIA (Chapter 6) and the latest introduction of a new EIA Order 2015, which was mentioned and discussed in Chapter 5, also appear to be some of the positive steps that the Government has undertaken towards improving environmental governance in the country.

Yet, as the author has underlined in this research, much more can be done to improve environmental governance in Malaysia, specifically public access to environmental information and participation in environmental decision-making, and in this sense, the author believes that there is no single or straightforward panacea that could be adopted as an outcome of this research, such as a suggestion to keep improving education or to provide *more* information to the public. Instead, the author has suggested a holistic approach to be considered, which takes into account the key systemic problems that were identified through this research, and recommends a mix of both traditional and innovative solutions. Drawing from the findings of this research, the author has created and presented in Chapter 8 the ALAMRAKYAT framework for enhancing access to

environmental information and public participation in environmental decision-making, which is specifically tailor-made to address the deficits faced in Malaysia and ultimately contribute to the country's aspirations as planned under Vision 2020 (and beyond). The framework could also be adopted by other countries and adapted to meet their needs and culture.

To conclude, the author believes that as a developing country vying to attain high-income-nation status while maintaining sustainability and promoting inclusivity, Malaysia would arguably be more likely to achieve such goals from enhancing good environmental governance through cultivating informed and environmentally ethical citizens who are engaged by an open and environmentally responsible Government. As the research suggests, this could be fostered through improving public access to environmental information and participation in environmental decision-making. Indeed, when informed citizens are given an opportunity to deliberate and express their opinions to authorities in charge on an issue of concern, even in cases where some members of the public may not be in favour of the ultimate decision, the process itself could possibly lead to building trust, knowledge and collaboration among all parties involved, and may even generate more effective policymaking in the long run, which could potentially yield further benefits for Malaysia, including the Government, and most importantly, the *rakyat*.

REFERENCES

AAP, 2012. Using social media during natural disasters is comforting, empowering, study finds. *The Australian Business Review*.

ABC News, 2015. Haze from Indonesian fires causes pollution spike in Malaysia. Available at: http://www.abc.net.au/news/2015-09-27/smoke-from-indonesia-causes-air-pollution-spike-in-malaysia/6808080 [Accessed March 17, 2016].

ABC Radio Australia, 2013. Scientists inspect Malaysia's Lynas plant as production begins (Radio interview by Liam Cochrane with Prof. Saleem Ali, Director of the Centre for Social Responsibility in Mining, The University of Queensland). Available at: http://www.radioaustralia.net.au/international/radio/program/connect-asia/scientists-inspect-malaysias-lynas-plant-as-production-begins/1095620 [Accessed November 11, 2014].

Abdul Mursyid Zainuddin, 2015. Pengurusan Bencana Banjir Daerah Kemaman 2014 Wajar Dicontohi. *SuaraTV*. Available at: http://www.suara.tv/2015/01/15/pengurusan-bencana-banjir-daerah-kemaman-2014-wajar-dicontohi/ [Accessed July 27, 2015].

Abraham, D., 2016. Rare earth magnates. *Chemistry World (Royal Society of Chemistry)*. Available at: http://www.rsc.org/chemistryworld/2016/02/china-monopoly-rare-earth-metals-mining-david-abraham [Accessed March 2, 2016].

Abu Bakar Munir & Siti Hajar Mohd Yasin, 2009. *Information and Communication Technology Law: State, Internet and Information - Legal & Regulatory Challenges* Student Ed., Petaling Jaya, Selangor: Sweet & Maxwell Asia.

Academy of Sciences Malaysia (ASM) & The National Professors' Council, 2011. *Rare Earth Industries: Moving Malaysia's Green Economy Forward*, Kuala Lumpur.

Adger, N. & Jordan, A., 2009. *Governing Sustainability*, Cambridge: Cambridge University Press.

Afroz, R., Mohd Nasir Hassan & Noor Akma Ibrahim, 2003. Review of air

pollution and health impacts in Malaysia. *Environmental Research*, 92(2), pp.71–77.

Agence France-Presse (AFP), 2012. Thousands of people protested Lynas rare earths plant in Malaysia. *The Australian Business Review*. Available at: http://www.theaustralian.com.au/business/mining-energy/thousands-of-people-protested-lynas-rare-earths-plant-iin-malaysia/story-e6frg9df-1226282229085 [Accessed December 21, 2012].

Agence France-Presse (AFP), 2014a. Malaysian government under fire for flood response. *The Guardian*.

Agence France-Presse (AFP), 2014b. Malaysians protest rare earth plant on Australia Day. *Straits Times*.

Agence France-Presse (AFP), 2014c. Rescuers struggle to reach flood victims in Malaysia as anger mounts. *The National (UAE News): World*.

Agence France-Presse (AFP), 2015a. Malaysia strengthens sedition law in a “black day” for free speech. *The Guardian*.

Agence France-Presse (AFP), 2015b. Malaysian cartoonist Zunar arrested for criticising Anwar Ibrahim ruling. *The Guardian*. Available at: http://www.theguardian.com/world/2015/feb/11/malaysian-cartoonist-zunar-arrested-for-criticising-anwar-ibrahim-ruling [Accessed March 4, 2016].

Agence France-Presse (AFP)/Reuters, 2014. Malaysia floods: PM Najib Razak increases assistance for flood victims as death toll rises to 10. *ABC News (Australian Broadcasting Corporation)*.

Ahmed, K., 2012. *Getting to Green: A Sourcebook of Pollution Management Policy Tools for Growth and Competitiveness*, Washington, D.C: World Bank Group.

Aida Idris, 2012. Globalisation and Socio-economic Development in Malaysia: Wither Small Businesses? *Asian Journal of Business and Accounting*, 5(1), pp.109–127.

Ainul Jaria Maidin, 2011. Access to Public Participation in the Land Planning and Environmental Decision Making Process in Malaysia. *International Journal of Humanities and Social Science*, 1(3), pp.148–164.

Ainul Jaria Maidin, 2006. Challenges in Implementing and Enforcing Environmental Protection Measures in Malaysia. *Law Review*.

Aisha Stacey, 2013. What is dua? *islam.ru - Islamic Information Portal*. Available at: http://islam.ru/en/content/story/what-dua [Accessed January 18, 2016].

Akademi Sains Malaysia (ASM), 2012a. International Symposium on Rare Earth Presentation by Mr Alastair Neill. *Youtube*. Available at: https://www.youtube.com/watch?v=7BUXlzY7BC4 [Accessed August 9, 2013].

Akademi Sains Malaysia (ASM), 2012b. International Syposium Rare Earth Part1 - Panel Discussion. *Youtube*. Available at: https://www.youtube.com/watch?v=cGPRaKnW9HA [Accessed August 9, 2013].

Akademi Sains Malaysia (ASM), 2012c. International Syposium Rare Earth Part 2 - Panel Discussion. *Youtube*. Available at: https://www.youtube.com/watch?v=5AEUpWKSU5M [Accessed August 9, 2013].

Akademi Sains Malaysia (ASM), 2013. *Revitalizing the Rare Earths Mineral Programme in Peninsular Malaysia as a Strategic Industry*, Kuala Lumpur: Akademi Sains Malaysia.

Akademi Sains Malaysia & National Professors' Council, 2012. Proceedings: International Symposium on Rare Earths and Intellectual Discourse. In *Rare Earth Industries: Moving Malaysia's Green Economy Forward & Intellectual Discourse: Green Opportunities in Rare Earth Industries*.

American Association for the Advancement of Science, 2009. Letter.

Amnesty International, 2016. Press Release: Malaysia must end unprecedented crackdown on hundreds of critics through Sedition Act. *Amnesty International*. Available at: http://www.amnestyusa.org/news/press-releases/malaysia-must-end-unprecedented-crackdown-on-hundreds-of-critics-through-sedition-act [Accessed January 29, 2016].

Andresen, S., 2001. Global Environmental Governance: UN Fragmentation and Co-ordination. In O. S. Stokke & O. B. Thommessen, eds. *Yearbook of*

International Co-operation on Environment and Development 2001/2002. London: Earthscan, pp. 19–26.

Anon, 1957. Federal Constitution. Reprint as at 1 November 2010.

Anon, 1976. *The Government in the Sunshine Act*, United States.

Areddy, J.T., 2013. China Still Dominates Rare-Earth Processing. *The Wall Street Journal*.

Arnott, K., 2013. Australian rare earths miner Lynas Corporation sparks fresh anger in Malaysia. *ABC News (Australian Broadcasting Corporation)*. Available at: http://www.abc.net.au/news/2013-10-09/an-lynas-corporation-sparks-fresh-anger-in-malaysia/5011284 [Accessed November 18, 2014].

Arnstein, S.R., 1969. A Ladder of Citizen Participation. *Journal of the American Institute of Planners*, 35(4), pp.216–224.

Article 19 Organisation, 1999. *The Public's Right to Know: Principles on Freedom of Information Legislation*, London.

Article 19 Organisation, 2015. Statement: Malaysia: Sedition Act upheld in further blow to free expression. *Article 19*. Available at: https://www.article19.org/resources.php/resource/38131/en/malaysia:-sedition-act-upheld-in-further-blow-to-free-expression [Accessed February 4, 2016].

Article 19 Organisation & CIJ, 2007. *A Haze of Secrecy: Access to Environmental Information in Malaysia*, Kuala Lumpur.

Asia-Pacific Forum for Environment and Development (APFED), 2009. Environmental Governance. In *APFED Fifth NetRes Meeting: Session III Cross-Cutting Issues*.

Asohan, A., 2013. GE13: A "social media election" after all. *Digital News Asia (DNA)*. Available at: https://www.digitalnewsasia.com/digital-economy/ge13-a-social-media-election-after-all/ [Accessed November 17, 2015].

Associated Press, 2011. Malaysia's government accuses opposition of fomenting "Arab spring." *The Guardian*.

Associated Press, 2012a. Malaysia to repeal repressive sedition law. *The Guardian*.

Associated Press, 2012b. Malaysians protest against rare earth refinery. *The Guardian*.

Astro Awani, 2014. Banjir di Kelantan (Khamis, 25 Dis, 2:00 petang). *Youtube*. Available at: https://www.youtube.com/watch?v=sUXU2wBRlo8 [Accessed December 25, 2014].

Atomic Energy Licensing Board (AELB), 2012. Compilation of FAQs Lynas Media Clarification (Feb 3rd – Apr 15th).

Atomic Energy Licensing Board (AELB), 2014. Official Website: Atomic Energy Licensing Board. Available at: http://portal.aelb.gov.my/sites/aelb/en/about-aelb/profile [Accessed December 12, 2014].

Attorney-General's Chambers, 2015. Official Portal: e-Federal Gazette. Available at: http://www.federalgazette.agc.gov.my/ [Accessed November 21, 2015].

Attorney-General's Chambers of Malaysia, 2015. Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015 - P.U. (A) 195.

Australian Government Department of the Environment, 2016. 20 Million Trees. Available at: http://www.environment.gov.au/land/20-million-trees [Accessed March 10, 2016].

Azlee, A., 2015. Worst floods in Kelantan, confirms NSC. *Malay Mail Online*.

Azmi Sharom, 2002. Malaysian Environmental Law: Ten Years after Rio. *Singapore Journal of International & Comparative Law*, 6, pp.855–890.

BBC, 1999. Row over Malaysian haze. *BBC News: World: Asia-Pacific*.

BBC, 2010. Boat collisions spark Japan-China diplomatic row. *BBC News: Asia-Pacific*. Available at: http://www.bbc.co.uk/news/world-asia-pacific-11225522 [Accessed July 17, 2015].

BBC, 2014a. Malaysia flooding: PM Najib Razak to tour inundated areas. *BBC News: Asia*.

BBC, 2014b. Malaysia sedition law to stay, says PM Najib Razak. *BBC News: Asia*.

BBC, 2015a. Malaysia protests against PM Najib Razak draw thousands. *BBC News*.

BBC, 2015b. Malaysia toughens sedition law penalties. *BBC News: Asia*.

BBC, 2015c. What causes South East Asia's haze? *BBC News: Asia*.

BBC Four, 2016. Weird Nature. Available at: http://www.bbc.co.uk/programmes/b03vrspg [Accessed March 7, 2016].

BBC News, 2015. Malaysia floods: Residents take matters in their own hands. *Youtube*. Available at: https://www.youtube.com/watch?v=Qj4Hswe8jKw [Accessed January 25, 2015].

BBC News, 2014. Worst of Malaysian flood captured on social media. *BBC News: Asia*.

BBC One, 2016. Tomorrow's Food. Available at: http://www.bbc.co.uk/programmes/b06r3jh5 [Accessed March 6, 2016].

BBC Two, 2016a. Stargazing Live. Available at: http://www.bbc.co.uk/programmes/b019h4g8 [Accessed March 5, 2016].

BBC Two, 2016b. Trust me Im a Doctor. Available at: http://www.bbc.co.uk/programmes/b04j9gny [Accessed January 15, 2016].

Beck, E.C., 1979. The Love Canal Tragedy. *US Environmental Protection Agency: EPA Journal*. Available at: https://www.epa.gov/aboutepa/love-canal-tragedy [Accessed March 20, 2016].

Benchmark Mineral Intelligence, 2015. China lifts rare earths export quota, but grip still remains. *Mining.com*. Available at: http://www.mining.com/web/china-lifts-rare-earths-export-quota-but-grip-still-remains/ [Accessed April 10, 2015].

beritanasionalrtm rasmi, 2014. #LAPORAN BANJIR 5 PM [26 Dis 2014]. *Youtube*. Available at: https://www.youtube.com/watch?v=nhaqyHVmDi0 [Accessed February 3, 2015].

beritanasionalrtm rasmi, 2015. LANDSKAP KHAS BANJIR [7 Jan 2015]. *Youtube*. Available at: https://www.youtube.com/watch?v=RyqhM8jhU1c [Accessed February 15, 2015].

Bernama, 2012. Prominent Kuantan doctor rubbishes concerns over Lynas' radioactivity. *The Star Online: Nation*. Available at: http://www.thestar.com.my/news/nation/2012/11/05/prominent-kuantan-

doctor-rubbishes-concerns-over-lynas-radioactivity/ [Accessed July 17, 2013].

Bernama, 2013a. Flood in Kemaman recedes fully, last evacuees return home. *Malay Mail Online*. Available at: http://www.themalaymailonline.com/malaysia/article/flood-in-kemaman-recedes-fully-last-evacuees-return-home [Accessed March 23, 2015].

Bernama, 2013b. Kemaman suffers worst flood in 50 years. *Daily Express Newspaper*.

Bernama, 2014a. 39 telco towers for Kelantan this year. *The Rakyat Post*. Available at: http://www.therakyatpost.com/news-in-brief/39-telco-towers-kelantan-year/ [Accessed May 23, 2015].

Bernama, 2014b. 60,000 displaced due to second wave of floods. *The Rakyat Post*. Available at: http://www.therakyatpost.com/news/2014/12/24/almost-60000-displaced-due-second-wave-floods/ [Accessed June 4, 2015].

Bernama, 2014c. Claims that water released from dam in Narathiwat, Thailand is untrue - MKN. *The Sun Daily*.

Bernama, 2014d. Expressing sadness, Najib describes Kelantan floods as a major disaster. *Malay Mail Online*.

Bernama, 2014e. Floods: Don't mess with the environment, says Kelantan Sultan. *The Star Online*.

Bernama, 2014f. Include Sleeping Bag, Power Bank In Flood Relief Supply - Ahmad Shabery. *Official Portal: Ministry of Communications and Multimedia Malaysia*.

Bernama, 2014g. Najib describes floods in Kelantan as major disaster – Bernama. *The Malaysian Insider (TMI)*.

Bernama, 2014h. No improvement in Kelantan, Terengganu, Pahang flood situation. *The Sun Daily*.

Bernama, 2014i. Terengganu hit by worst floods in three decades. *Malay Mail Online*.

Bernama, 2015a. Effect Of Climate Change And Global Warming Is Real, Cannot Be Viewed Lightly - Najib. *MalaysianDigest.com*. Available at:

http://www.malaysiandigest.com/news/582277-effect-of-climate-change-and-global-warming-is-real-cannot-be-viewed-lightly-najib.html [Accessed January 4, 2016].

Bernama, 2015b. Kelantan floods tear down concrete bridge. *Astro Awani: News - Malaysia*.

Bernama, 2015c. Kemaman flood management plan to be flood SOP model — Najib. *Borneo Post Online*.

Bernama, 2015d. Solid Proof Of Illegal Logging, Land-Clearing In Gua Musang - Shahidan. *Bernama.com*.

Bernama, 2015e. Uncontrolled logging in Kelantan the cause of flooding. *Free Malaysia Today (FMT) News*.

Bernama, 2016. Scorching hot weather to persist till March. *The Star Online*. Available at: http://www.thestar.com.my/news/nation/2016/01/29/scorching-hot-weather-to-persist-till-march/ [Accessed February 2, 2016].

Bernstein, S., 2004. Legitimacy in Global Environmental Governance. *Journal of International Law & International Relations*, 1(1–2), pp.139–166.

Berrebi, C. & Ostwald, J., 2011. Earthquakes, hurricanes, and terrorism: do natural disasters incite terror? *Public Choice*, 149, pp.383–403.

BERSIH, 2014. BERSIH. Available at: http://www.globalbersih.org/ [Accessed May 24, 2014].

Bhattacherjee, A., 2012. *Social Science Research: Principles, Methods, and Practices* Textbooks, Global Text Project.

Biasio, F., 2014. Interview Tan Bun Teet. *Vimeo*. Available at: https://vimeo.com/112395919 [Accessed January 14, 2015].

Biernacki, P. & Waldorf, D., 1981. Snowball Sampling: Problems and Techniques of Chain Referral Sampling. *Sociological Methods & Research*, 10(2), pp.141–163.

Blakkarly, J., 2015. Malaysia's indigenous hit hard by deforestation. *Al Jazeera*.

Borneo Post Online, 2013. Lynas withdraws libel suit against group. *Borneo Post Online*.

Borneo Post Online, 2015. Kemaman flood management plan to be improved to

become model. *Borneo Post Online*.

Boyle, J., 1998. Cultural influences on implementing environmental impact assessment: Insights from Thailand, Indonesia, and Malaysia. *Environmental Impact Assessment Review*, 18(2), pp.95–116.

Bradsher, K., 2010. Amid Tension, China Blocks Vital Exports to Japan. *The New York Times: Global Business*. Available at: http://www.nytimes.com/2010/09/23/business/global/23rare.html?_r=0.

Bradsher, K., 2011a. Malaysia Plan Meets Standards, U.N. Agency Says. *The New York Times: Global Business*. Available at: http://www.nytimes.com/2011/07/01/business/global/01lynas.html [Accessed December 5, 2012].

Bradsher, K., 2011b. Mitsubishi Quietly Cleans Up Its Former Refinery. *The New York Times*, p.B4.

Bradsher, K., 2011c. Taking a Risk for Rare Earths. *The New York Times*, p.B1.

Braiker, B., 2012. The open source problem solvers creating government 2.0. *The Guardian*. Available at: https://www.theguardian.com/technology/2012/may/03/open-source-problem-solvers-government [Accessed February 17, 2016].

Brand, K.-W. & Reusswig, F., 2006. The social embeddedness of global environmental governance. In G. Winter, ed. *Multilevel Governance of Global Environmental Change: Perspectives from Science, Sociology and the Law*. Cambridge: Cambridge University Press.

Brennan, E., 2013. The Next Oil?: Rare Earth Metals. *The Diplomat*. Available at: http://thediplomat.com/2013/01/the-new-prize-china-and-indias-rare-earth-scramble/ [Accessed March 4, 2014].

Briffett, C., Obbard, J. & Mackee, J., 2004. Environmental assessment in Malaysia: a means to an end or a new beginning? *Impact Assessment and Project Appraisal*, 22(3), pp.221–233.

British Geological Survey, 2011. *Rare Earth Elements*, United Kingdom.

Brown, K., 2009. Human development and environmental governance: a reality check. In N. Adger & A. Jordan, eds. *Governing Sustainability*. Cambridge:

Cambridge University Press, pp. 32–52.

Bruch, C. & King, S., 2002. Constitutional Procedural Rights: Enhancing Civil Society's Role in Good Governance. In C. Bruch, ed. *The New "Public": The Globalization of Public Participation*. Washington, D.C: Environmental Law Institute, pp. 21–38.

Bullock, J., 1977. The Government in the Sunshine Act - An Overview. *Duke Law Journal*, 565.

Butler, K., 2012. Your Smartphone's Dirty, Radioactive Secret. *Mother Jones: Environment*.

Cambridge University Press, 2016. Non-binding. *Cambridge Dictionary*. Available at: http://dictionary.cambridge.org/dictionary/english/non-binding [Accessed September 20, 2016].

Caminiti, S., 2015. Billionaire teams up with NASA to mine the moon. *CNBC.com*. Available at: http://www.cnbc.com/2015/03/10/billionaire-teams-up-with-nasa-to-mine-the-moon.html [Accessed October 17, 2015].

Carlarne, C.P., 2008. Good Climate Governance: Only a Fragmented System of International Law Away? *Law & Policy*, 30(4).

Carrington, D., 2014. Extreme weather becoming more common, study says. *The Guardian*. Available at: https://www.theguardian.com/environment/2014/aug/11/extreme-weather-common-blocking-patterns [Accessed December 16, 2014].

Case, W., 2001. Malaysia's Resilient Pseudodemocracy. *Journal of Democracy*, 12(1), pp.43–57.

Centre for Independent Journalism (CIJ), 2012. Centre for Independent Journalism (homepage): Advocacy Areas. Available at: http://cijmalaysia.org/ [Accessed November 16, 2012].

Centre for Public Policy Studies (CPPS), 2008. CPPS Policy Factsheet: Freedom of Information. *Policy Areas: CPPS Policy FactSheets*. Available at: http://www.cpps.org.my/downloads/factsheets/Freedom of information factsheet.pdf [Accessed July 16, 2014].

Channel NewsAsia, 2015. Malaysians usher in new year by volunteering in flood

relief efforts. *Channel NewsAsia*. Available at: http://www.channelnewsasia.com/news/asiapacific/malaysians-usher-in-new/1562412.html [Accessed March 4, 2015].

Che Hashim Bin Hassan, 2011. Poverty in a Malay State in Malaysia: A Socio-Demographic Study. In *Society of Interdisciplinary Business Research (SIBR) 2011 Conference on Interdisciplinary Business Research*.

Chi, M., 2015. Social media scooped everybody when it came to coverage of the worst disaster in recent history. *Malay Mail Online*.

Chin, E.S.M., 2015. Counting the costs, as flash floods hit two days in a row. *Malay Mail Online*.

ChinaForbiddenNews, 2012. Rare Earth Minerals Turn Villages to Ruins. *Youtube*. Available at: https://www.youtube.com/watch?v=TGLC59rCCDc [Accessed August 8, 2014].

Choi, C.Q., 2014. $1 Trillion Trove of Rare Minerals Revealed Under Afghanistan. *Live Science*. Available at: www.livescience.com/47682-rare-earth-minerals-found-under-afghanistan.html [Accessed March 5, 2015].

Chooi, C., 2012a. Anti-Lynas lobby group to join Bersih rally. *The Malaysian Insider (TMI)*.

Chooi, C., 2012b. No need for detailed EIA from Lynas - DOE. *The Malaysian Insider*. Available at: http://www.themalaysianinsider.com/litee/malaysia/article/doe-no-need-for-detailed-eia-from-lynas/ [Accessed December 3, 2012].

Chuah, S.-H., 2010. Teaching East-Asian Students: Some Observations. *The Economics Network*. Available at: https://www.economicsnetwork.ac.uk/showcase/chuah_international [Accessed October 18, 2015].

Clapper, J.R., 2013. Statement for the Record: Worldwide Threat Assessment of the US Intelligence Community. In *Senate Select Committee on Intelligence*.

Commission of the European Communities, 2001. *European Governance: A White Paper*, Brussels.

Common, R., 2003. Malaysia: A Case of Business as Usual? In A. B. L. Cheung

& I. Scott, eds. *Governance and Public Sector Reform in Asia: Paradigm Shifts or business as usual?*. London & New York: RoutledgeCurzon, pp. 163–185.

Conservation International, 1998. Megadiversity: The 17 Biodiversity Superstars. Available at: http://archive.today/MVkoy.

Consumer Association of Penang, 2013. Chronology of events in the Bukit Merah Asian Rare Earth development. Available at: http://www.consumer.org.my/index.php/health/454-chronology-of-events-in-the-bukit-merah-asian-rare-earth-developments [Accessed November 14, 2013].

Convention on Biological Diversity Secretariat, Ecosystem Approach. *Convention on Biological Diversity*. Available at: http://www.cbd.int/ecosystem/principles.shtml [Accessed January 17, 2014].

Cook, J. et al., 2013. Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environmental Research Letters*, 8(2), pp.1–7.

Cornell University, 2009. Digital Literacy is... *Cornell University Digital Literacy Resource*. Available at: https://digitalliteracy.cornell.edu/ [Accessed January 15, 2016].

Costi, A., 2003. Environmental Protection, Economic Growth and Environmental Justice: Are They Compatible in Central and Eastern Europe? In J. Agyeman, R. Bullard, & B. Evans, eds. *Just Sustainabilities: Development in an Unequal World*. London: Earthscan Publicatons Ltd, pp. 289–310.

Crouch, H., 1993. Malaysia: Neither Authoritarian nor Democratic. In K. Hewison, R. Robinson, & G. Rodan, eds. *Southeast Asia in the 1990s: Authoritarianism, Democracy and Capitalism*. Sydney: Allen and Unwin, pp. 75–108.

Crow, J.M., 2011. Unsung Elements. *New Scientist*, pp.36–41.

Cruickshank, E.W., Schneeberger, K. & Smith, N. eds., 2012. *A Pocket Guide to Sustainable Development Governance* Second., Commonwealth Secretariat.

Das, S.B. & Lee, P.O. eds., 2014. *Malaysia's Socio-Economic Transformation:*

Ideas for the Next Decade, Pasir Panjang, Singapore: Institute of Southeast Asian Studies.

David, L., 2010. Is Mining Rare Minerals on the Moon Vital to National Security? *Space.com*. Available at: http://www.space.com/9250-mining-rare-minerals-moon-vital-national-security.html [Accessed June 16, 2014].

Day, C., 2011. Tackling barriers to environmental justice. Access to environmental justice in England and Wales: A decade of leading a horse to water. In *Aarhus and Access Rights: the new landscape*. WWF-UK.

Delgado, A. & Strand, R., 2010. Looking North and South: Ideals and realities of inclusive environmental governance. *Geoforum*, 41(1), pp.144–153.

Dellinger, M., 2012. Ten Years of the Aarhus Convention: How Procedural Democracy is Paving the Way for Substantive Change in National and International Environmental Law. *Colorado Journal of International Environmental Law and Policy*, 23(2).

Department of Environment (DOE), 2007. *Environmental Impact Assessment (EIA): Environmental Impact Procedure and Requirements in Malaysia*.

Department of Environment (DOE), 2010. *Environmental Requirements: A Guide For Investors* Eleventh., Putrajaya.

Department of Environment (DOE), 2011. *2011 Annual Report*,

Department of Environment (DOE), 2012a. *2012 Annual Report*,

Department of Environment (DOE), 2012b. About the EHS Notification and Registration Scheme (EHSNR). *EHSNR: Online Notification and Registration of Environmentally Hazardous Substances*. Available at: https://www.e-ehs.doe.gov.my/app/webroot/portal/about-ehs-n-r/?doing_wp_cron=1461013530.4433889389038085937500 [Accessed June 20, 2015].

Department of Environment (DOE), 2012c. Definition of EHS. *EHSNR: Online Notification and Registration of Environmentally Hazardous Substances*. Available at: https://www.e-ehs.doe.gov.my/app/webroot/portal/definition-of-ehs/ [Accessed June 20, 2015].

Department of Environment (DOE), 2012d. EHSNR: Online Notification and

Registration of Environmentally Hazardous Substances. Available at: https://www.e-ehs.doe.gov.my/app/webroot/portal/ [Accessed June 20, 2015].

Department of Environment (DOE), 2012e. *Malaysia Environmental Quality Report 2012*,

Department of Environment (DOE), 2014. Enviro Knowledge Management Centre. Available at: https://enviro.doe.gov.my/ [Accessed April 2, 2014].

Department of Environment (DOE), 2015. Official Website of Environment Institute of Malaysia. Available at: http://www.doe.gov.my/eimasv2/ [Accessed March 16, 2015].

Department of Environment (DOE), 2016a. APIMS: Air Pollutant Index of Malaysia. Available at: http://apims.doe.gov.my/v2/ [Accessed March 5, 2016].

Department of Environment (DOE), 2016b. Official Portal of Department of Environment, Ministry of Natural Resources & Environment. Available at: http://www.doe.gov.my/portalv1/en/ [Accessed February 26, 2016].

Department of Information Malaysia, 2015. Vision and Mission. *Official Website: Department of Information, Ministry of Communications and Multimedia Malaysia*. Available at: http://www.penerangan.gov.my/index.php/en/about-jpen/organisation-profile/vision-and-mission [Accessed July 18, 2015].

Department of Irrigation and Drainage Malaysia, 2005. About infobanjir. Available at: http://infobanjir.water.gov.my/01about_infobanjir.htm [Accessed August 15, 2014].

Department of Irrigation and Drainage Malaysia, 2011. Public Infobanjir. Available at: http://publicinfobanjir.water.gov.my/mobile-main-page.cfm?bam=2 [Accessed April 21, 2015].

Department of Statistics Malaysia, 2011. Population Distribution and Basic Demographic Characteristic Report 2010 (Updated: 05/08/2011). *Department of Statistics Malaysia, Official Portal*. Available at: http://www.statistics.gov.my/index.php?r=column/cthemeByCat&cat=117&bul_id=MDMxdHZjWTk1SjFzTzNkRXYzcVZjdz09&menu_id=L0pheU43NWJw

RWVSZklWdzQ4TlhUUT09 [Accessed April 12, 2015].

Department of Statistics Malaysia, 2013. *Compendium of Environment Statistics Malaysia 2013*.

Department of Statistics Malaysia, 2015. Compendium of Environment Statistics. *Department of Statistics Malaysia, Official Portal*. Available at: https://www.statistics.gov.my/index.php?r=column/cone&menu_id=dUg2UVgralU4cVluSFFIVG5RVmRpQT09 [Accessed March 18, 2016].

Department of Statistics Malaysia & The Economic Planning Unit of the Prime Minister's Department (EPU), 2010. Population by sex, ethnic group and age, Kelantan, 2010. , p.12. Available at: http://www.epu.gov.my/epu-theme/pdf/1.2.5.pdf [Accessed June 25, 2015].

Desai, B.H., 2010. *Multilateral Environmental Agreements: Legal Status of the Secretariat*, Cambridge, USA: Cambridge University Press.

Dictionary.com, 2014. Sunshine law. Available at: http://dictionary.reference.com/browse/sunshine+law [Accessed September 5, 2014].

Dina Murad, 2015. Fire chief: Kemaman disaster management to be role model. *The Star Online*.

Dobson, A., 2010. *Environmental citizenship and pro-environmental behaviour: Rapid research and evidence review*, London, United Kingdom.

Dohlnér, L. & Grom, K., 2006. *Establishing in Malaysia: The Impact of Cultural Factors. Master thesis within Business Administration*. Jönköping University.

Dresang, D.L. & Gosling, J.J., 1999. *Politics and Policy in American States and Communities*, Boston: Allyn and Bacon Publishers.

Dryzek, J.S., 2000. *Deliberative Democracy and Beyond: Liberals, Critics, Contestations*, New York: Oxford University Press.

Duvic-Paoli, L.-A., 2012. The Status of the Right to Public Participation in International Environmental Law: An Analysis of the Jurisprudence. *Yearbook of International Environmental Law*, 23(1), pp.80–105.

Dwivedi, O.P. et al., 2001. *Sustainable Development and Canada: National and International Perspectives* 1st ed., University of Toronto Press, Higher

Education Division.

Ebbesson, J. et al., 2013. *The Aarhus Convention: An Implementation Guide* Second., United Nations.

Els, F., 2013. Largest known rare earth deposit discovered in North Korea. *Mining.com*. Available at: http://www.mining.com/largest-known-rare-earth-deposit-discovered-in-north-korea-86139/ [Accessed August 16, 2014].

Elsevier, 2014. *Rare Earth Elements Part 2: The New Grey Rush - Seeking Out Untapped Rare Earth Deposits*.

Emang, J.J.J., 2006. Public Participant in EIA process in Sarawak: Any Room for Improvement? In *Fourth Sabah-Sarawak Environmental Convention*. pp. 1–8.

Environ Consulting Services (M) Sdn. Bhd., 2008. *Preliminary Environmental Impact Assessment and Quantitative Risk Assessment: Proposed Advanced Materials Plant, Gebeng Industrial Estate, Kuantan Pahang, Malaysia. Volume 1: Main Report*, Petaling Jaya, Selangor.

Environmental Commissioner of Ontario, 2016. *The Environmental Bill of Rights: Your Environment, Your Rights*.

Erda Kursyiah Basir, 2015. Kemaman District a Role Model for Flood Management. *Bernama.com*. Available at: http://bernama.com/bernama/v3/bm//news_lite.php?id=1100901 [Accessed May 19, 2015].

European Commission, 2003. *eLearning: Better eLearning for Europe* Directorate-General for Education and Culture, ed., Luxembourg: Office for Official Publications of the European Communities.

European Commission, 2014. *MEMO - WTO Appellate Body confirms: China's export restrictions on rare earths and other raw materials illegal*, Brussels.

Faiz Zainudin, 2015. Jerebu: Majlis Fatwa didesak bersuara. *Free Malaysia Today News*. Available at: http://www.freemalaysiatoday.com/category/bahasa/2015/10/21/jerebu-majlis-fatwa-didesak-bersuara/ [Accessed October 20, 2015].

Fauziah Ahmad et al., 2012. Information Propagation and the Forces of Social

Media in Malaysia. *Asian Social Science*, 8(5), pp.71–76.

Federal Department of Town and Country Planning & Ministry of Housing and Local Government, 2006. *National Physical Plan 2006*.

Fernandez, T. & Azril Annuar, 2015. Better coordination needed for flood reconstruction. *The Malaysian Insider (TMI)*.

Finger, M., 2008. Which governance for sustainable development? In J. Park, K. Conca, & M. Finger, eds. *The Crisis of Global Environmental Governance: Towards a new political economy of sustainability*. Oxon: Routledge, pp. 34–55.

Fischer, F., 2000. *Citizens, Experts, and the Environment: The Politics of Local Knowledge*, Durham and London: Duke University Press.

FMT Reporters, 2014. Heavy rain next week, flash floods on west coast. *Free Malaysia Today News*. Available at: http://www.freemalaysiatoday.com/category/nation/2014/12/27/heavy-rain-next-week-flash-floods-on-west-coast/ [Accessed January 20, 2015].

Foti, J. et al., 2008. *Voice and Choice: Opening the Door to Environmental Democracy*.

Friends of the Earth, 2008. Your Right to Know: An Introduction.

Friends of the Earth International, 2004. *Our environment, Our rights: Standing up for People and the Planet*, Amsterdam.

Fulton, S. & Benjamin, A., 2011. Effective National Environmental Governance – A Key to Sustainable Development. In *INECE Ninth International Conference on Environmental Compliance and Enforcement*. British Columbia, Canada, pp. 1–10.

Furuoka, F. & Lo, M.C., 2005. Japanese Multinational Corporations and the Export of Pollution: The Case of Bukit Merah. *Electronic journal of contemporary japanese studies*, 5(1, Article 1).

Fuziah Salleh, 2014. Stop Lynas Rare Earth Refinery Campaign in Kuantan. *www.fuziahsalleh.my*. Available at: http://fuziahsalleh.my/?page_id=999%5D [Accessed November 19, 2014].

Gao, G., 2015. How do Americans stand out from the rest of the world? *Pew*

Research Center. Available at: http://www.pewresearch.org/fact-tank/2015/03/12/how-do-americans-stand-out-from-the-rest-of-the-world/ [Accessed February 16, 2016].

Gaworecki, M., 2015. Illegal logging contributed to deadly Malaysian floods, according to government minister. *Mongabay*. Available at: https://news.mongabay.com/2015/02/illegal-logging-contributed-to-deadly-malaysian-floods-according-to-government-minister/ [Accessed June 19, 2015].

Geert Hofstede Consortium, 2013. Geert Hofstede - Recent Discoveries about Cultural Differences. *Youtube*. Available at: https://www.youtube.com/watch?v=LBv1wLuY3Ko [Accessed August 3, 2014].

Global Environment Centre, 2002. Solid Waste in Malaysia. *Global Environment Centre*. Available at: http://www.gecnet.info/index.cfm?&menuid=83 [Accessed October 18, 2012].

Global Voices, 2015. Young Malaysian Volunteers Are Taking a Leading Role in Flood Relief Efforts. *Global Voices*. Available at: https://globalvoices.org/2015/01/09/young-malaysian-volunteers-are-taking-a-leading-role-in-flood-relief-efforts/ [Accessed March 5, 2015].

Goldfarb, A. & Prince, J., 2008. Internet adoption and usage patterns are different: Implications for the digital divide. *Information Economics and Policy*, 20(1), pp.2–15.

Gooch, L., 2012. Environmental Protest Becomes Rallying Point in Malaysia. *The New York Times: Global Business*.

Gooch, L. & Bradsher, K., 2012. Political and Construction Hurdles for Malaysia Rare Earths Plant. *The New York Times: Global Business*. Available at: http://www.nytimes.com/2012/03/22/business/global/political-and-construction-holdups-for-malaysia-rare-earths-plant.html.

Government of Brazil, 2016. Acesso à Informação. Available at: http://www.acessoainformacao.gov.br/ [Accessed March 7, 2016].

Government of Malaysia, 2014. myGovernment: 1Malaysia One Call Centre.

Available at: https://www.malaysia.gov.my/en/1-malaysia-one-call-centre [Accessed February 16, 2014].

Government of Newfoundland and Labrador, 2016. Office of Public Engagement. Available at: http://www.ope.gov.nl.ca/ [Accessed February 18, 2016].

Government of Selangor, 2011. Laws of the State of Selangor: Enactment 8. Freedom of Information (State of Selangor) Enactment 2011. , (64(17)).

Grasso, V.B., 2013. *Rare Earth Elements in National Defense: Background, Oversight Issues, and Options for Congress*.

Green Access Project, 2012. "Let's achieve the principles of the Aarhus Convention in Japan!" *United Nations Economic Commission for Europe (UNECE)*. Available at: www.unece.org/index.php?id=32375 [Accessed September 27, 2016].

GreenFaith, 2016. Religious Teachings on the Environment. *GreenFaith: Interfaith Partners for the Environment*. Available at: http://www.greenfaith.org/religious-teachings [Accessed January 12, 2016].

GreenLeftTV, 2012. Why Malaysians oppose the Lynas rare earth refinery. *Youtube*. Available at: https://www.youtube.com/watch?v=OjBEHUD_HvM&feature=youtu.be [Accessed March 23, 2013].

Grudgings, S., 2014. Malaysian law professor charged in crackdown on dissent. *Reuters*.

Gullick, J.M., 1969. *Malaysia*, London: Ernest Benn Limited.

Hafiz Ashaari, 2008. Zainal Abidin - Hijau (HQ). *Youtube*. Available at: https://www.youtube.com/watch?v=68PJW15iJSw [Accessed October 29, 2013].

Haliza Abdul Rahman, 2010. Human Rights to Environment in Malaysia. *Health and the Environment Journal*, 1(1), pp.59–64.

Handl, G., 2012. Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), 1972 and the Rio Declaration on Environment and Development, 1992. *United Nations Audiovisual Library of*

International Law, pp.1–11. Available at: http://legal.un.org/avl/pdf/ha/dunche/dunche_e.pdf [Accessed October 17, 2013].

Harada, M., 1995. Minamata disease: methylmercury poisoning in Japan caused by environmental pollution. *US National Library of Medicine, National Institute of Health (PubMed)*, 25(1), pp.1–24.

Harding, A., 1996. Practical Human Rights, NGOs and the Environment in Malaysia. In A. E. Boyle & M. R. Anderson, eds. *Human Rights Approaches to Environmental Protection*. Oxford: Oxford University Press & Clarendon Press, pp. 227–244.

Harding, A. & Azmi Sharom, 2007. Access to Environmental Justice in Malaysia (Kuala Lumpur). In A. Harding, ed. *Access to Environmental Justice: a Comparative Study*. Leiden; Boston: Martinus Nijhoff Publishers, pp. 125–156.

Haskin, L.A. & Paster, T.., 1979. Geochemistry and Mineralogy of the rare earths. In K. A. J. Gschneidner & L. Eyring, eds. *Handbook on the Physics and Chemistry of Rare Earths*. Amsterdam, New York, Oxford: North-Holland Publishing Company, pp. 1–80.

Hatch, G., 2012. Rare-Earth Terminology - A Quick Refresher On The Basics. *Technology Metals Research (TMR)*. Available at: http://www.techmetalsresearch.com/2012/12/rare-earth-terminology-a-quick-refresher-on-the-basics/ [Accessed July 18, 2014].

Hayward, B., 2012. *Children, Citizenship and Environment: Nurturing a democratic imagination in a changing world*, Oxon: Routledge.

Head, J., 2012. Lynas learns fate for Malaysia rare earth refinery. *BBC News*.

Head, J., 2016. Bauxite in Malaysia: The environmental cost of mining. *BBC News: Asia*.

Hezri, A.A. & Dovers, S.., 2012. Shifting the policy goal from environment to sustainable development. In H. Hill, S. Y. Tham, & R. Haji Mat Zin, eds. *Malaysia's Development Challenges: Graduating from the Middle*. Oxon: Routledge.

Hezri, A.A. & Hasan, M.N., 2006. Towards sustainable development? The evolution of environmental policy in Malaysia. *Natural Resources Forum*, 30(1), pp.37–50.

Hill, H., Tham, S.Y. & Ragayah Haji Mat Zin eds., 2012. *Malaysia's Development Challenges: Graduating from the Middle* Routledge., Oxon & New York: Routledge.

Hill, J., 2011. *The Secret Life of Stuff: A Manual for a New Material World*, London: Vintage Books.

Ho, Y.C., 1990. Legal and Institutional Arrangements for Environmental Impact Assessment in Malaysia. *Impact Assessment*, 8(1–2), pp.309–318.

Hofstede, G., Hofstede, G.J. & Minkov, M., 2010. *Cultures and Organizations: Software of the Mind* Revised an., New York: McGraw-Hill USA.

Huffington Post, 2014. The White House Goes All "West Wing" With "Big Block Of Cheese Day." *HuffPostTV*.

Humphries, M., 2013. *Rare Earth Elements: The Global Supply Chain*,

Huong, L., 2009. *Environmental Governance*, United Nations Environment Programme. Nairobi.

Hurst, C., 2010. *China's Rare Earth Elements Industry: What Can the West Learn?*. Institute for the Analysis of Global Security (IAGS).

Ichihara, M. & Harding, A., 1995. Human Rights, the Environment and Radioactive Waste: A Study of the Asian Rare Earth Case in Malaysia. *Review of European Community & International Environmental Law*, 4(1), pp.1–14.

Ikhwan Hazwan, 2014. Wrong to blame floods only on illegal logging, says Kelantan govt. *The Rakyat Post*. Available at: http://www.therakyatpost.com/news/2014/12/31/wrong-blame-floods-illegal-logging-says-kelantan-govt/ [Accessed January 6, 2015].

Imperial College London, 2016a. OPAL: Citizen science for everyone. Available at: http://www.imperial.ac.uk/opal [Accessed April 20, 2016].

Imperial College London, 2016b. Proper Scientific Conduct: Guidelines for Proper Scientific Conduct in Research. *Central Secretariat*. Available at:

https://www.imperial.ac.uk/admin-services/secretariat/college-governance/charters-statutes-ordinances-and-regulations/policies-regulations-and-codes-of-practice/proper-scientific-conduct/ [Accessed May 20, 2016].

Information Commissioner's Office (ICO), 2015a. How to access information from a public body. Available at: https://ico.org.uk/for-the-public/official-information/ [Accessed November 10, 2015].

Information Commissioner's Office (ICO), 2015b. What are the Environmental Information Regulations? Available at: https://ico.org.uk/for-organisations/guide-to-the-environmental-information-regulations/what-are-the-eir/ [Accessed July 18, 2015].

Information Commissioner's Office (ICO), 2016. Homepage. Available at: https://ico.org.uk/ [Accessed February 15, 2016].

Innovation Metals, 2013. Introduction to the Rare Earths. Available at: http://www.innovationmetals.com/introduction-to-the-rare-earths/ [Accessed July 15, 2014].

Institute of Physics, 2015. Mining the Moon becomes a serious prospect. *ScienceDaily*. Available at: www.sciencedaily.com/releases/2015/02/150202114634.htm [Accessed July 8, 2015].

Intergovernmental Panel on Climate Change (IPCC), 2007. Summary for Policymakers. In S. Solomon et al., eds. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK and New York, NY, USA: Cambridge University Press.

Intergovernmental Panel on Climate Change (IPCC), 2014. *Climate Change 2014 Synthesis Report Summary for Policymakers*.

International Committee of the Red Cross (ICRC), 2007. Key messages and facts on environmental degradation. In *30th International Conference of the Red Cross and Red Crescent, Geneva, 26 to 30 November 2007*. Geneva.

International Federation of Red Cross and Red Crescent Societies (IFRC), 2014.

World Disasters Report: Focus on culture and risk, Lyon, France.

International Federation of Red Cross and Red Crescent Societies (IFRC), 2013. *World Disasters Report: Focus on technology and the future of humanitarian action*, Lyon, France.

International Group of Experts on Human Rights and the Environment, 1994. Draft Declaration on Principles of Human Rights and the Environment. Available at: http://www1.umn.edu/humanrts/instree/1994-dec.htm.

International Union for Conservation of Nature (IUCN), 2010a. Interactive Portal on Rights Based Approaches to Conservation. *News*. Available at: http://www.iucn.org/news_homepage/news_by_date/?6156/Interactive-Portal-on-Rights-Based-Approaches-to-Conservation [Accessed August 8, 2014].

International Union for Conservation of Nature (IUCN), 2010b. Join the Rights-Based Approach to Conservation Portal. *News*. Available at: https://www.iucn.org/content/join-rights-based-approach-conservation-portal [Accessed August 8, 2014].

International Union for Conservation of Nature (IUCN), 2012. Environmental Governance: Institutional Framework for Sustainable Development. Available at: http://www.iucn.org/news_homepage/events/iucn___rio___20/iucn_position/environmental_governance/.

International Union of Pure and Applied Chemistry (IUPAC), 2016. Periodic Table of Elements. Available at: http://iupac.org/what-we-do/periodic-table-of-elements/ [Accessed January 12, 2016].

Iskhandar Razak, 2015. Malaysian authorities using Sedition Act to stem criticism, opposition says. *ABC News (Australian Broadcasting Corporation)*.

Jeffery, M.I., 2005. Environmental Governance: A Comparative Analysis of Public Participation and Access to Justice. *Journal of South Pacific Law*, 9(2), pp.1–19.

Jendroska, J., 2001. UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental

Matters: Towards More Effective Public Involvement in Monitoring Compliance and Enforcement in Europe. In *Fifth International Conference on Environmental Compliance and Enforcement*. pp. 153–160.

Jenkins, N., 2016. Corruption Allegations Continue to Build Against Malaysia's Prime Minister. *Time*.

Jones, N., 2013. A Scarcity of Rare Metals Is Hindering Green Technologies. *Yale Environment 360*. Available at: http://e360.yale.edu/feature/a_scarcity_of_rare_metals_is_hindering_green_technologies/2711/ [Accessed September 17, 2015].

Kalathil, S., 2008. Natural Disasters: What Role for Information and Communication? *The World Bank: People, Spaces, Deliberation (Blog)*. Available at: http://blogs.worldbank.org/publicsphere/natural-disasters-what-role-information-and-communication [Accessed April 16, 2015].

Kamariah Dola, 2000. Environmental Governance and Sustainability in Local Plan: The Case of Peninsular Malaysia. In *17th EAROPH World Congress: Local Development and Planning in the 21st Century*. Asan City, Korea.

Kamini, R.S. et al., 2015. Unseen flood heroes (video). *The Rakyat Post*.

Kar, A. et al., 2010. *Effective Environmental Compliance and Governance: Perspectives from the Natural Resources Defense Council*,

Kaur, M., 2015. "No manipulation of API." *New Straights Times Online*.

Kemp, S., 2012. Social, Digital and Mobile in Malaysia. *We are Social (UK): blog*. Available at: http://wearesocial.com/uk/blog/2012/01/social-digital-mobile-malaysia [Accessed February 9, 2016].

Key, F.S., 1814. The Star-Spangled Banner (U.S. National Anthem).

Khoo, B.T., 2002. Democracy and Transition in Malaysia: An Analysis of the Problems of Political Succession. *Macalester International*, 12, Articl, pp.59–79.

Khoo, B.T., 2005. *Ethnic Structure, Inequality and Governance in the Public Sector: Malaysian Experiences (Democracy, Governance and Human Rights Programme Paper Number 20)*,

Khor, M., 2015. Lessons from the great floods. *The Star Online: Columnists*.

Available at: http://www.thestar.com.my/opinion/columnists/global-trends/2015/01/19/lessons-from-the-great-floods/ [Accessed July 7, 2015].

Kidela Capital Group, 2011. Rare Earth Processing 101. *Kitco.com (Kitco Metals Inc.)*. Available at: http://www.kitco.com/ind/Kidela/may102011.html [Accessed August 8, 2014].

King, H., 2016. REE - Rare Earth Elements and their Uses. *Geology.com*. Available at: http://geology.com/articles/rare-earth-elements/ [Accessed January 4, 2016].

Koeck, I., 2014. More than 200,000 people displaced by worst flooding in decades. *International Federation of Red Cross and Red Crescent Societies*. Available at: http://www.ifrc.org/en/news-and-media/news-stories/asia-pacific/malaysia/more-than-200000-people-displaced-by-worst-flooding-in-decades-67836/ [Accessed February 26, 2015].

Kok, C., 2015. With 5 years to go Govt getting feedback to achieve Vision 2020. *The Star Online*.

Koshy, S., 2009. Selangor to be first to have freedom of information law. *The Star Online*.

Koswanage, N. & Grudgings, S., 2012. Malaysian police, protesters clash, raising poll doubts. *Reuters*.

Kuala Lumpur City Hall, 2015. Kuala Lumpur Structure Plan. *Official Portal of Kuala Lumpur City Hall, Agency under Ministry of Federal Territories*. Available at: http://www.dbkl.gov.my/pskl2020/english/ [Accessed October 21, 2015].

Laird, F.N., 1993. Participatory Analysis, Democracy, and Technological Decision Making. *Science, Technology, & Human Values*, 18(3), pp.341–361.

Latifah, A.., Mohd Armi, A.. & Nur Ilyana, M.Z., 2009. Municipal solid waste management in Malaysia: Practices and challenges. *Elsevier Waste management*, 29(11), pp.2902–2906.

Latimer, C., 2011. Mt Weld rare earths mine officially open. *Australian Mining: News*. Available at: http://www.miningaustralia.com.au/news/mt-weld-rare-earths-mine-officially-open [Accessed July 3, 2015].

Laws of Malaysia, 1948. Sedition Act 1948 (Revised 1969). Incorporating all amendments up to 1 January 2006 - Act 15.

Laws of Malaysia, 1972. Official Secrets Act 1972. Incorporating all amendments up to 1 January 2006 - Act 88.

Laws of Malaysia, 1974. Environmental Quality Act 1974 (Act 127): Incorporating latest amendment - Act A1102/2001.

Laws of Malaysia, 1976. Town and Country Planning Act 1976 (Act 172) - Incorporating all amendments up to 1 January 2006.

Laws of Malaysia, 1984a. Atomic Energy Licensing Act 1984. Incorporating all amendments up to 1 January 2006 - Act 304.

Laws of Malaysia, 1984b. Printing Presses and Publications Act 1984. Online version of updated text and reprint (as at 1 September 2012) - Act 301. Available at: http://www.agc.gov.my/agcportal/uploads/files/Publications/LOM/EN/Act 301 - Printing Presses And Publications Act 1984.pdf [Accessed October 17, 2015].

Laws of Malaysia, 1985. Environmental Quality (Amendment) Act 1985 - Act A636.

Laws of Malaysia, 1986. Promotion of Investments Act 1986. Incorporating all amendments up to 1 January 2006 - Act 327.

Lee, J.C.H., 2014. Multiculturalism and Malaysia's (Semi-) Democracy: Movements for Electoral Reform in an Evolving Ethno-Political Landscape. In N.-K. Kim, ed. *Multicultural Challenges and Sustainable Democracy in Europe and East Asia*. Basingstoke, United Kingdom: Palgrave Macmillan, pp. 83–105.

Lee, P., 2012a. "I"ll prove it's safe' Ongkili to visit Bkt Merah. *Free Malaysia Today News*. Available at: http://www.freemalaysiatoday.com/category/nation/2012/03/22/ill-prove-its-safe-ongkili-to-visit-bkt-merah/ [Accessed November 24, 2013].

Lee, P., 2012b. PPPA: Newspapers get longer leash. *Free Malaysia Today News*. Available at:

http://www.freemalaysiatoday.com/category/nation/2012/04/18/ministry-tables-amendments-to-press-act/ [Accessed June 5, 2015].

Lee, P., 2015. Paul Low: Malaysia not ready for Freedom of Information Act. *The Star Online*.

Leigh, M. & Lip, B., 2004. Transitions in Malaysian Society and Politics: Towards Centralizing Power. In J. Rolfe, ed. *The Asia-Pacific: A Region in Transition*. Asia-Pacific Center for Security Studies, pp. 300–322.

Leong, P., 2015. Political Communication in Malaysia: A Study on the Use of New Media in Politics. *eJournal of eDemocracy*, 7(1), pp.46–71.

Leong, S., 2014. *New Media and the Nation in Malaysia: Malaysianet* Routledge., Oxon & New York: Routledge.

Lepard, B.D., 2013. The Necessity of Opinio Juris in the Formation of Customary International Law. In *Does Customary International Law Need Opinio Juris?*. Geneva: Duke-Geneva Institute of Transnational Law.

Levinson, L., 2015. What exactly is digital literacy, anyway? *The Women's Learning Studio: Blog*. Available at: https://www.womenslearningstudio.net/what-exactly-is-digital-literacy-anyway/ [Accessed January 6, 2016].

Lieberman, M.D., 2013. *Social: Why our Brains are Wired to Connect*, New York: Broadway Books.

Lifton, J., 2013. A Visit To The Lynas Advanced Materials Plant. *Technology Metals Research (TMR)*. Available at: http://www.techmetalsresearch.com/2013/03/a-visit-to-the-lynas-advanced-materials-plant/ [Accessed July 15, 2013].

Lim, I., 2012. Despite legal threat, anti-Lynas groups say not cowed. *The Malaysian Insider (TMI)*. Available at: http://www.themalaysianinsider.com/malaysia/article/despite-legal-threat-anti-lynas-groups-say-not-cowed [Accessed June 21, 2013].

Lim, I., 2015a. The Edge's 1MDB reports in breach of publication law, Home Ministry says after freeze. *Malay Mail Online*.

Lim, I., 2015b. The Edge back in business as Home Ministry fails to stay

dismissal. *Malay Mail Online*.

Lin, M.M., 2015. Saifuddin Abdullah: Malaysians ready to ditch race-based politics, but not Malay party leaders. *Malay Mail Online*.

Liow, J. & Leifer, M., 2015. *Dictionary of the Modern Politics of Southeast Asia* 4th ed., Oxon & New York: Routledge.

Livelli, K., 2015. Rare earth elements: Not so rare after all. *CBS 60 Minutes*. Available at: http://www.cbsnews.com/news/rare-earth-elements-not-so-rare-after-all/ [Accessed August 10, 2015].

Loayza, F., 2012. Strategic Environmental Assessment. In *Getting to Green: A Sourcebook of Pollution Management Policy Tools for Growth and Competitiveness*. Washington, D.C: World Bank Group, pp. 34–44.

Long, K.R. et al., 2010. The Geology of Rare Earth Elements. *Geology.com (Republished from: The Principal Rare Earth Elements Deposits of the United States, USGS Scientific Investigations Report 2010-5220)*. Available at: http://geology.com/usgs/ree-geology/ [Accessed June 20, 2014].

Lye, L.H., 2002. Public Participation in the Environment: A Southeast Asian Perspective. In D. N. Zillman, A. R. Lucas, & G. (Rock) Pring, eds. *Human Rights in Natural Resource Development: Public Participation in Sustainable Development of Mining and Energy Resources*. United Kingdom: Oxford University Press, pp. 652–678.

Lynas Corporation Ltd, 2007. *Quarterly Report for the Period Ending 31 March 2007*, Sydney, Australia.

Lynas Corporation Ltd, 2012. Lynas Advanced Materials Plant. Available at: https://www.lynascorp.com/SiteCollectionDocuments/Fact Sheets/Lynas_Advanced_Material_Plant.pdf [Accessed February 3, 2013].

Lynas Corporation Ltd, 2013. About Lynas. Available at: http://www.lynascorp.com/category.asp?category_id=2 [Accessed February 20, 2013].

Lynas Corporation Ltd, 2015. About Lynas: Foundations for the Future. Available at: https://www.lynascorp.com/Pages/about-lynas.aspx [Accessed September 8, 2015].

Lynas Malaysia Videos, 2011a. Lynas Malaysia - Nick Curtis on Lynas and the Bukit Merah incident. *Youtube*. Available at: https://www.youtube.com/watch?v=9cYIc5jG4JI [Accessed February 17, 2013].

Lynas Malaysia Videos, 2011b. Lynas Malaysia - Nick Curtis on why Lynas chose Malaysia. *Youtube*. Available at: https://www.youtube.com/watch?v=LjfYXqRqpIw [Accessed January 7, 2013].

MacDonald, K.E., 2006. Sustaining the Environmental Rights of Children: An Exploratory Critique. *Fordham Environmental Law Review*, 18(1), pp.1–65.

Macnamara, J., Sakinofsky, P. & Beattie, J., 2012. *E-Electoral Engagement: Maintaining and Enhancing Democratic Participation through Social Media - Report to the Australian Electoral Commission by Australian Centre for Public Communication, University of Technology Sydney, May*, Canberra, ACT, Australia.

Mahathir Mohamad, 1991. Malaysian: The Way Forward (Vision 2020). Available at: http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan003223.pdf [Accessed May 8 2013].

Mahathir Mohamad, 1999. Malaysia on Track for 2020 Vision. Available at: http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan003222.pdf [Accessed May 8 2013].

Mahathir Mohamad, 2005. Malaysian Incorporated & Privatisation: Its Rationale and Purpose. *Management*, pp.4–7.

Mahavera, S., 2015. Is poverty-eradication programme the cause of Kelantan's floods? *The Malaysian Insider (TMI)*. Available at: http://www.themalaysianinsider.com/malaysia/article/is-poverty-eradication-programme-the-cause-of-kelantans-floods [Accessed April 7, 2015].

Makuch, K.E. & Pereira, R., 2012. *Environmental and Energy Law*, Wiley-Blackwell.

Makuch, Z., 2009. *Guidance Note on the Aarhus Convention for Public*

Authorities. European Union & Malta Environment and Planning Authority (MEPA).

Malay Mail Online, 2014a. Despite floods, some Kelantanese refuse to budge from home. *Malay Mail Online*.

Malay Mail Online, 2014b. Kelantan floods divine impetus for hudud rollout, claims Nik Aziz's son. *Malay Mail Online*.

Malay Mail Online, 2014c. Kuala Krai flood victims trapped without food, water or electricity at shelter. *Malay Mail Online*.

Malay Mail Online, 2014d. Muhyiddin orders deployment of more transportation assets in flood-hit Kelantan. *Malay Mail Online*. Available at: http://www.themalaymailonline.com/malaysia/article/muhyiddin-orders-deployment-of-more-transportation-assets-in-flood-hit-kela [Accessed January 12, 2015].

Malay Mail Online, 2014e. Number of evacuees rises to 132,000 nationwide as floods hit Negri Sembilan. *Malay Mail Online*.

Malay Mail Online, 2014f. Over 4,500 emergency calls flood emergency lines. *Malay Mail Online*.

Malay Mail Online, 2014g. Second wave of floods hits Kelantan. *Malay Mail Online*.

Malay Mail Online, 2014h. Shabery: Ministry to restore communications system disrupted by floods. *Malay Mail Online*.

Malay Mail Online, 2015a. Fewer than half Malaysians trust the government, study shows. *Malay Mail Online*.

Malay Mail Online, 2015b. Putrajaya not ready to enact free info law? We'll show you how, Selangor Speaker says. *Malay Mail Online*.

Malaysia, 1976. *Third Malaysia Plan 1976-1980*, Kuala Lumpur: Prime Minister's Department.

Malaysia Tourism Promotion Board, 2000. *Annual Report 2000.pdf*, Kuala Lumpur.

Malaysiakini, 2012. Lynas threatens to sue anti-rare earth plant groups. *Asian Human Rights Defenders (AHRD)*.

Malaysian Administrative Modernisation and Management Planning Unit (MAMPU), 2015. 1Akses: Official Government Search Engine. Available at: http://1akses.malaysia.gov.my/ [Accessed September 17, 2015].

Malaysian Investment Development Authority (MIDA), 2015. General Guidelines & Facilities: Environmental Management. *Official Website: Malaysian Investment Development Authority (MIDA)*. Available at: http://www.mida.gov.my/home/environmental-management/posts/ [Accessed August 23, 2015].

Malaysian Meteorological Department, 2015a. Jabatan Meteorologi Malaysia (MetMalaysia). *Twitter*. Available at: https://twitter.com/malaysianmet [Accessed November 10, 2015].

Malaysian Meteorological Department, 2015b. Malaysian Meteorological Department: Government Organisation. *Facebook*. Available at: https://www.facebook.com/malaysiamet [Accessed November 10, 2015].

Malaysian Meteorological Department, 2015c. metmalaysia. *Instagram*. Available at: https://www.instagram.com/metmalaysia/ [Accessed November 10, 2015].

Malaysian Meteorological Department, 2015d. Official Website: Malaysian Meteorological Department (MetMalaysia). Available at: http://www.met.gov.my/web/metmalaysia/home [Accessed August 16, 2015].

Malaysian Timber Council (MTC), 1978. National Forestry Policy 1978 (revised 1993). Available at: http://www.mtc.com.my/issues/index.php?option=com_content&view=article&id=1%3Anational-forestry-policy-1978-revised-1993&catid=25%3Athe-project&Itemid=27 [Accessed February 21, 2013].

Mariam Mokhtar, 2015. The real reason for the Kelantan floods. *Free Malaysia Today (FMT) News*.

Mason, M., 2010. Information disclosure and environmental rights: the Aarhus Convention , 10 (3). pp. 10-31. *Global environmental politics*, 10(3), pp.10–31.

Massachusetts Institute of Technology (MIT), 2014. Rare Earth Elements: A

comprehensive background. *Mission 2016: Strategic Mineral Management*. Available at: http://web.mit.edu/12.000/www/m2016/finalwebsite/elements/ree.html [Accessed January 4, 2014].

Mathew, J., 2015. China abolishes rare-earth export quotas after WTO ruling. *International Business Times UK*.

Maverick, T., 2015. Will China's Latest Moves Help Rare Earth Producers? *Wall Street Daily*.

McChrystal, R., 2015. Malaysia: Zunar mounts constitutional challenge to Sedition Act. *Index on Censorship*. Available at: https://www.indexoncensorship.org/2015/11/zunar-launches-constitutional-challenge-malaysias-sedition-act/ [Accessed February 2, 2016].

McKirdy, E., 2015. Southeast Asia's haze crisis: A "crime against humanity." *CNN*.

mediarakyat, 2012. (Anti-Lynas Rally) Anwar Ibrahim: Kalau Kita Di Putrajaya, Kita Akan Batalkan Lynas. *Youtube*. Available at: https://www.youtube.com/watch?v=I7w6XW4I7Z8 [Accessed March 15, 2013].

Menon, P. & Chow, E., 2015. Malaysia's home ministry suspends top publications over 1MDB reports. *Reuters*.

Merriam-Webster, 2015. Nonbinding. *Merriam-Webster Thesaurus*. Available at: http://www.merriam-webster.com/thesaurus/nonbinding [Accessed September 20, 2016].

MERS 999, 2015. 999. Available at: http://www.999.gov.my/ [Accessed April 25, 2015].

Meyer-Resende, M., 2011. *International Consensus: Essential Elements of Democracy*,

Michels, E., 2016. What is the American Dream? *The American Dream Webquest at the OS*. Available at: http://america.day-dreamer.de/dream.htm [Accessed February 15, 2016].

Miller, A., 2013. Recent Developments with National and International

Environmental Impact Assessment Processes: Status and Progress of Environmental Impact Assessment in the United States of America. *Canadian Environmental Assessment Agency*. Available at: http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=B4993348-1&offset=13 [Accessed September 16, 2015].

Miller, L., 2016. It's That Time of Gruyère: Big Block of Cheese Day Is Back. *The White House: Blog*. Available at: https://www.whitehouse.gov/blog/2016/01/08/big-block-cheese-day-back-again-gouda-time [Accessed March 6, 2016].

Mining.com Editor, 2012. Meet China's new rare earth mega-company. *Mining.com*. Available at: http://www.mining.com/meet-chinas-new-rare-earth-mega-company-94431/ [Accessed June 17, 2014].

Mining Technology, 2014. Scarce supply - the world's biggest rare earth metal producers. Available at: http://www.mining-technology.com/features/featurescarce-supply---the-worlds-biggest-rare-earth-metal-producers-4298126/ [Accessed September 9, 2014].

Ministry of Energy Green Technology and Water, 1979. National Energy Policy 1979. Available at: http://www.kettha.gov.my/portal/index.php?r=kandungan/index&menu1_id=2&menu2_id=26&menu3_id=110# [Accessed August 19, 2013].

Ministry of Energy Green Technology and Water, 2009a. *National Renewable Energy Policy & Action Plan*,

Ministry of Energy Green Technology and Water, 2009b. The National Green Technology Policy. Available at: http://portal.ppj.gov.my/c/document_library/get_file?p_l_id=17335&folderId=27605&name=DLFE-4709.pdf [Accessed May 21, 2014].

Ministry of Finance Malaysia, 2014. Pioneer Status. *Official Portal of Ministry of Finance Malaysia*. Available at: http://www.treasury.gov.my/index.php?option=com_content&view=article&id=704&Itemid=200&lang=en [Accessed June 4, 2014].

Ministry of Foreign Affairs Malaysia, 2016. Multilateral Diplomacy. *Multilateral*

Treaties. Available at: http://www.kln.gov.my/web/guest/md-treaties [Accessed September 25, 2016].

Ministry of Natural Resources and Environment Malaysia, 2010. *National Policy on Climate Change*, Ministry of Natural Resources and Environment Malaysia.

Ministry of Science Technology and the Environment Malaysia, 1998. *Malaysia's National Policy on Biological Diversity*,

Ministry of Science Technology and the Environment Malaysia, 2002. *National Policy on the Environment*, Ministry of Science, Technology and the Environment, Malaysia.

Mittermeier, R.A., Robles-Gil, P. & Mittermeier, C.G., 1997. Biodiversity A-Z: A-Z areas of biodiversity importance - Megadiversity Countries. *Megadiversity. Earth's Biologically Wealthiest Nations*. Available at: http://www.biodiversitya-z.org/areas/26.

Moon Express Inc., 2013. Moon Express. Available at: http://www.moonexpress.com/ [Accessed July 18, 2014].

Morrison, W.M. & Tang, R., 2012. *China's Rare Earth Industry and Export Regime: Economic and Trade Implications for the United States*,

Muniandy, L. & Muniandy, B., 2013. The Impact of Social Media in Social and Political Aspects in Malaysia: An Overview. *International Journal of Humanities and Social Science*, 3(11), pp.71–76.

Murdoch, L., 2015. Asian haze set to become worst on record. *The Sydney Morning Herald*.

Murty, M., 2015. Hannah Yeoh takes Paul Low to task for his "disappointing excuses." *The Rakyat Post*.

Mustafa, M., 2011. *Environmental Law in Malaysia*, Netherlands: Kluwer Law International.

Najam, A., Papa, M. & Taiyab, N., 2006. *Global Environmental Governance: A Reform Agenda*,

Najib Tun Razak, 2013. Malaysia's Transformation: Propelling Malaysia to Developed Nation Status. *Harvard International Review*, 35(2).

Najib Tun Razak, 2014. The 2015 Budget Speech by YAB Dato' Sri Mohd Najib Tun Haji Abdul Razak Prime Minister and Minister of Finance: "Budget 2015: People Economy." *Bernama*. Available at: http://www.bernama.com/bernama/v8/newsspeech.php?id=753 [Accessed November 20, 2014].

NASA, 2016. Scientific consensus: Earth's climate is warming. Available at: http://climate.nasa.gov/scientific-consensus/ [Accessed February 16, 2016].

Natural Resources Defense Council (NRDC), 2013. Natural Resources Defense Council. Available at: https://www.nrdc.org/ [Accessed March 18, 2013].

New Scientist, 1986. Malaysia's yytrium headache. *New Scientist*, 109(1490), p.23.

New South Wales Government Environment Protection Authority (NSW EPA), 2015. Report to EPA mobile app. *NSW EPA (Australia)*. Available at: http://www.epa.nsw.gov.au/pollution/reporttoepa.htm [Accessed February 19, 2016].

New Straits Times, 2008. Internet Served a Painful Lesson. *New Straits Times*, Main Section.

Ngai, W.C., 1997. Increasing flood risk in Malaysia: causes and solutions. *Disaster Prevention and Management: An International Journal*, 6(2), pp.72–86.

Nomura, Y. & Sakumoto, N., 1997. An Overview: The Development of Environmental Law in Asian Countries. In Y. Nomura & N. Sakumoto, eds. *Environmental Law and Policy in Asia: Issues of Enforcement*. Institute of Developing Economies, Japan External Trade Organization (IDE-JETRO).

Noor Zalina Mahmood, 2000. Solid waste management in Malaysia: a comparison study. In *26th WEDC Conference - Water, Sanitation and Hygiene: Challenges of the Millennium*. Dhaka, Bangladesh.

Norhayati Mohamad Yusof, 2012. Public Participation Approaches and Strategies under the EIA Process in Malaysia. In *AECEN Regional Workshop: Strengthening Public Participation on Environmental Management*. Jakarta, Indonesia, pp. 1–17.

NPCS Board of Consultants & Engineers, 2009. *Handbook on Rare Earth Metals and Alloys (Properties, Extraction, Preparation And Applications)*, Delhi, India: Asia Pacific Business Press Inc.

Nur Barizah Abu Bakar & Zakiah Saleh, 2011. Enhancing Malaysian Public Sector Transparency and Accountability: Lessons and Issues. *European Journal of Economics, Finance and Administrative Sciences*, (31), pp.133–145.

Office of the High Commissioner for Human Rights (OHCHR), Good Governance and Human Rights. Available at: http://www.ohchr.org/EN/Issues/Development/GoodGovernance/Pages/GoodGovernanceIndex.aspx.

Ogola, P.F.A., 2007. Environmental Impact Assessment General Procedures. In *Short Course II on Surface Exploration for Geothermal Resources, organized by UNU-GTP and KenGen, at Lake Naivasha, Kenya, 2-17 November, 2007*. Naivasha, Kenya: United Nations University Geothermal Training Programme, pp. 1–16.

de Oliveira, J.A.P., 2008. *Implementation of Environmental Policies in Developing Countries: A Case of Protected Areas and Tourism in Brazil* SUNY serie., Albany: State University of New York Press.

Ong, D., 1999. Joint Development of Common Offshore Oil and Gas Deposits: "Mere" State Practice or Customary International Law? *The American Journal of International Law*, 93(4), pp.771–804.

Ong, D., 2010. Procedural International Environmental Justice? The Evolution of Procedural Means for Environmental Protection: From Inter-State Obligations to Individual-State Rights. In D. French, ed. *Global Justice and Sustainable Development*. Leiden; Boston: Martinus Nijhoff Publishers, pp. 137–166.

Open Government Guide, 2015. Brazil has developed an online platform to process information requests. *News & Updates*. Available at: http://www.opengovguide.com/news/brazil-has-developed-an-online-platform-to-process-information-requests/ [Accessed March 3, 2016].

Organisation for Economic Co-Operation and Development (OECD), 2001. *Citizens as Partners: OECD Handbook on Information, Consultation and Public Participation in Policy-making*, Paris.

Organisation for Economic Co-Operation and Development (OECD), 2011. *How's Life? Measuring Well-being*, OECD Publishing.

Osaka University Graduate School of Law, 2016. Green Access Project. Available at: http://greenaccess.law.osaka-u.ac.jp/english [Accessed September 27, 2016].

Oxford Business Group, 2014. The Guide - Title matters: Navigating the use of honorifics and their lineage. *The Report: Malaysia 2014*. Available at: http://www.oxfordbusinessgroup.com/overview/title-matters-navigating-use-honorifics-and-their-lineage [Accessed March 12, 2016].

Oxford Dictionaries, 2013. Definition of democracy in English: democracy. *Oxford University Press*. Available at: http://oxforddictionaries.com/definition/english/democracy [Accessed May 1, 2013].

Padman, P., 2002. Freedom of Information : Access to Information as a Key to Democratic Governance.

Pahang State Development Corporation (PKNP), 2012. Gebeng Industrial Estate. *The Official Portal: Invest in Pahang*. Available at: http://www.investinpahang.gov.my/index.php?ch=en_investinpahang&pg=en_industrialareas&ac=9.

Pak, J., 2014. What is Malaysia's sedition law? *BBC News: Asia*.

Pandey, K.C., 2008. Cultural Identities and Linguistic Dilemmas of a Futuristic Vision: Wittgensteinian Perspective into Indian Context. In A. P. Dubey, ed. *Modernity and the Problem of Cultural Identity*. New Delhi: Northern Book Centre, pp. 122–133.

Panirchellvum, V., 2015. State of devastation. *The Sun Daily*.

Parliament of Malaysia, 2013. Special Select Committee on Lynas Advanced Materials Plant (LAMP). *The Official Portal of Parliament of Malaysia*. Available at: http://www.parlimen.gov.my/arkib-elektronik-

dr.html?&view=168&uweb=dr&lang=en [Accessed April 6, 2014].

Parliament of Malaysia, 2015. The Official Portal of Parliament of Malaysia. Available at: http://www.parlimen.gov.my/index.php?&lang=en [Accessed July 22, 2015].

Pearce, F., 2014. Local people preserve the environment better than governments. *New Scientist*. Available at: https://www.newscientist.com/article/mg22329802-900-local-people-preserve-the-environment-better-than-governments/ [Accessed June 7, 2015].

Percetakan Nasional Malaysia Berhad (PNMB), 2010. e-Warta. Available at: http://www.e-warta.com.my/ [Accessed November 21, 2015].

Percetakan Nasional Malaysia Berhad (PNMB), 2015. www.lawnet.com.my: Malaysian Laws at your Fingertips. Available at: http://www.lawnet.com.my/ [Accessed November 21, 2015].

Performance Management and Delivery Unit (PEMANDU), 2011a. About GTP: GTP Overview. Available at: http://www.pemandu.gov.my/gtp/About_GTP-@-GTP_Overview.aspx [Accessed December 14, 2013].

Performance Management and Delivery Unit (PEMANDU), 2011b. About GTP: What is Transformation? Available at: http://www.pemandu.gov.my/gtp/About_GTP-@-What_is_Transformation%5E.aspx [Accessed November 12, 2012].

Performance Management and Delivery Unit (PEMANDU), 2011c. What are NKRAs?: NKRAs Overview. Available at: http://www.pemandu.gov.my/gtp/What_Are_NKRAs%255E-@-NKRAs_Overview.aspx [Accessed November 18, 2012].

Performance Management and Delivery Unit (PEMANDU), 2012. Government Transformation Programme (GTP): Annual Report 2011, P.P.M. and D.U. (PEMANDU), 2012. *Government Transformation Programme (GTP): Annual Report 2011*, Putrajaya.

Petkova, E. et al., 2002. *Closing the gap: Information, Participation, and Justice in Decision-making for the Environment - Executive Summary*,

Pew Research Center, 2015. America's Changing Religious Landscape. *Religion and Public Life*. Available at: http://www.pewforum.org/2015/05/12/americas-changing-religious-landscape/ [Accessed February 16, 2016].

Pollock, D.C. & van Reken, R., 2009. *Third Culture Kids: The Experience of Growing Up Among Worlds*, Boston & London: Nicholas Brealey Publishing.

Pretorius, D., 2014. *Beyond Play: A down-to-earth approach to governance, risk and compliance*, United States of America: Xlibris LLC.

Radio Television Malaysia (RTM), 2014. PSA Awas banjir RTM. *Youtube*. Available at: https://www.youtube.com/watch?v=3M3N53bAIpI [Accessed January 6, 2015].

Rahmah Ghazali, 2014. Floods: Anxious relatives praying for victims' safety. *The Star Online*. Available at: http://www.thestar.com.my/news/nation/2014/12/28/floods-anxious-relatives/ [Accessed April 12, 2015].

Rahman Roslan, 2011. A Refinery Rises in Malaysia. *The New York Times: Global Business*. Available at: http://www.nytimes.com/slideshow/2011/03/09/business/global/rare-slideshow.html [Accessed September 14, 2013].

rakza88, 2012. lagu wawasan 2020. *Youtube*. Available at: https://www.youtube.com/watch?v=TRw4ROUM5Qg [Accessed October 28, 2013].

Ramakrishnan, S., 2015. Government agencies sleeping on the job – S. Ramakrishnan. *The Malaysian Insider*.

Rao, V. & Walton, M. eds., 2004. *Culture and Public Action*, Standford, California: Stanford University Press.

Rare Element Resources Ltd., 2014. Rare Earth Elements: Rare Earths Found in an iPhone. Available at: http://www.rareelementresources.com/rare-earth-elements [Accessed February 9, 2014].

Raybeck, D. & De Munck, V., 2010. Values and Change Over a Generation: Kelantan, Malaysia. *Cross-Cultural Research*, 44(2), pp.97–115.

Razak Ahmad et al., 2014. Access to east coast cut off. *The Star Online*.

Available at: http://www.thestar.com.my/news/nation/2014/12/29/access-to-east-coast-cut-off-floodwaters-submerge-main-roads-leading-to-affected-areas/ [Accessed January 17, 2015].

Richmond, S., 2010. *Malaysia, Singapore and Brunei*, Hawthorn, Victoria, Australia: Lonely Planet Publications Ltd.

Richtel, M., 2012. Wasting Time Is New Divide in Digital Era. *The New York Times: U.S.*, p.A1.

Right To Environment, Non-binding Declarations and Reports: Draft Declaration of Principles on Human Rights and the Environment (1994). Available at: http://www.righttoenvironment.org/default.asp?pid=83.

Rosli bin Mohamed, 2015. Majlis Perbandaran Kemaman: Pengurusan Banjir (Kemaman Municipal Council: Flood Management). In *Persidangan Kesihatan Persekitaran Pihak Berkuasa Tempatan 2015*. Labuan, Sabah: Local Government Department, Ministry of Urban Wellbeing, House and Local Government, pp. 1–76.

Rosnadhirah Ramli, Mohd. Zin Mohamed & Rustam Khairi Zahari, 2012. The Contributions of Public Participation in Environmental Impact Assessment (EIA) towards Promoting Sustainable Development in Malaysia. In *2012 EAROPH World Congress, 17th - 19th October 2012.* Daegu, Republic of Korea: (Unpublished).

Saenz, A., 2016. White House Gets Ready for “Big Block of Cheese Day.” *ABC News (United States)*. Available at: http://abcnews.go.com/Politics/white-house-ready-big-block-cheese-day/story?id=36268982 [Accessed February 17, 2016].

Sahabat Alam Malaysia, 2004. *Malaysian Environment in Crisis*, Penang, Malaysia: Sahabat Alam Malaysia.

Sahabat Alam Malaysia (SAM), 2015. Sahabat Alam Malaysia. Available at: http://www.foe-malaysia.org/ [Accessed August 10, 2015].

Sarangi, P., 2012. Can the Right to Information Help? *Journal of Democracy*, 23(1), pp.149–154.

Save Malaysia Stop Lynas (SMSL), 2011. Save Malaysia Stop Lynas!:

Merchandises by Save Malaysia. *Blogger*. Available at: http://savemalaysia-stoplynas.blogspot.co.uk/2011/06/merchandises-by-save-malaysia.html [Accessed June 22, 2013].

Save Malaysia Stop Lynas (SMSL), 2012a. High Court Denied Lynas' the Injunction to Gag SMSL. *Blogger*. Available at: http://savemalaysia-stoplynas.blogspot.co.uk/2012/07/high-court-denied-lynas-injunction-to.html [Accessed January 19, 2013].

Save Malaysia Stop Lynas (SMSL), 2012b. Weekend Nation-wide Stop Lynas Actions. *Blogger*. Available at: http://www.savemalaysia-stoplynas.blogspot.co.uk/2012/07/weekend-nation-wide-stop-lynas-actions.html [Accessed January 12, 2013].

Science and Environmental Health Network (SEHN), 2008. *An Environmental Right for Future Generations: Model State Constitutional Provisions & Model Statute*,

Scottish Executive, 2006. *Sustainable Development: A Review of International Literature*, Edinburgh.

Shaffer, L., 2012. Promoting Active Citizenry — Advocacy and Participation in Decision Making. In *Getting to Green: A Sourcebook of Pollution Management Policy Tools for Growth and Competitiveness*. Washington, D.C: World Bank Group, pp. 268–277.

Shahanaaz Habib, 2012. A freer role in the offing? *The Star Online*.

Sham Sani, 1993. *Environment and Development in Malaysia: Changing Concerns and Approaches*, Kuala Lumpur: ISIS Malaysia.

Sham Sani, 1999. Beyond Environmental Legislation: Environmental Education in Malaysia. In I. Yasumasa et al., eds. *Integrated Environmental Management: Development, Information, and Education in the Asian-Pacific Region*. Boca Raton & London: Lewis Publishers, pp. 29–47.

Shamsuddin Abdullah, 2002. Intervention Notes by H.E. Ambassador Dato' Shamsuddin Abdullah, Ambassador of Malaysia in Italy. In *First Meeting of the Parties to the Aarhus Convention*. Lucca, Italy.

Sharifah Zarah Syed Ahmad, 2014. Leader's insights: In Person with...Y.Bhg.

Dato' Sri Dr. Sharifah Zarah Syed Ahmad. *myForesight*, pp.4–6.

Shut Down Lynas, 2014. Natalie Lowrey speaks outside Lynas HQ in Sydney. *Youtube*. Available at: https://www.youtube.com/watch?v=MOPCl5pw4_g [Accessed November 12, 2014].

Siddiquee, N.A. ed., 2013. *Public Management and Governance in Malaysia: Trends and Transformations* Southeast., London & New York: Routledge.

de Silva, L. & Wates, J., 2012. Globalizing Environmental Democracy: A Call for International Action. *UNEP Perspectives*, (7), pp.1–18.

Skelton, J., 2012. Rare Earth Metal Monopolies. *Supply Chain Almanac*. Available at: http://supplychainalmanac.com/2391/rare-earth-metal-monopolies-its-all-about-the-supply-chain/ [Accessed October 6, 2013].

Somin, I., 2010. Deliberative Democracy and Political Ignorance. *Critical Review*, 22(2–3), pp.253–279.

Spencer-Oatey, H., 2000. Introduction: Language, Culture and Rapport Management. In H. Spencer-Oatey, ed. *Culturally Speaking: Managing Rapport through Talk Across Cultures*. London & New York: Continuum, pp. 1–10.

Spyke, N.P., 1999. Public Participation in Environmental Decisionmaking at the New Millennium: Structuring New Spheres of Public Influence. *Boston College Environmental Affairs Law Review*, 26(2), pp.263–313.

Spykerman, N., 2015. We do not predict floods, says weatherman. *The Star Online*.

Staerdahl, J. et al., 2004. Environmental Impact Assessment in Malaysia, South Africa, Thailand, and Denmark: Background, layout, context, public participation and environmental scope. *The Journal of Transdisciplinary Environmental Studies*, 3(1), pp.1-19.

State of California, 2011. List of Worldwise Scientific Organizations: Scientific Organizations That Hold the Position That Climate Change Has Been Caused by Human Action. Available at: https://www.opr.ca.gov/s_listoforganizations.php [Accessed January 30, 2016].

Stec, S. & Casey-Lefkowitz, S., 2000. *United Nations Economic Commission for Europe (UNECE): The Aarhus Convention: An Implementation Guide* J. Jendroska, ed., New York and Geneva: United Nations.

Stoddart, H. ed., 2011. *A Pocket Guide to Sustainable Development Governance* First., Stakeholder Forum & Commonwealth Secretariat.

Stourton, E., 2015. The decline of religion in the West. *BBC News: World*.

Sue, V.M. & Ritter, L.A., 2012. *Conducting Online Surveys* 2nd ed., Los Angeles, London, New Delhi, Singapore & Washington DC: SAGE Publications.

Sumaco, F.T., Imrie, B.C. & Hussaina, K., 2014. The Consequence of Malaysian National Culture Values on Hotel Branding. *Procedia - Social and Behavioral Sciences: 5th Asia-Euro Conference 2014 in Tourism, Hospitality & Gastronomy*, 144, pp.91–101.

Sundaram, J.K., 2014. "Malaysia Incorporated": Corporatism a la Mahathir. *Institutions and Economies*, 6(1), pp.73–94.

Tan, C.L., 2014. #TheYearThatWas: Distressing environmental issues in Malaysia in 2014. *The Star Online*.

Tan, J., 2015. Kemaman – the "gold standard." *The Star Online: Columnists*.

Tanquintic-Misa, E., 2012. Lynas Injunction Case Set to be Heard in Malaysian Court in June. *International Business Times*. Available at: http://www.nasdaq.com/article/lynas-injunction-case-set-to-be-heard-in-malaysian-court-in-june-cm140145 [Accessed January 17, 2013].

Taylor, A., 2014. Bhopal: The World's Worst Industrial Disaster, 30 Years Later. *The Atlantic*.

Taylor, M. et al., 2012. The role of social media as psychological first aid as a support to community resilience building: a Facebook study from "Cyclone Yasi Update." *Australian Journal of Emergency Management*, 27(1).

Techopedia, 2016. Computer Literate. *Techopedia.com*. Available at: https://www.techopedia.com/definition/23303/computer-literate [Accessed January 13, 2016].

Teoh, E. Sen, 2012. No TOL issued, AELB says it again. *Free Malaysia Today News*. Available at:

http://www.freemalaysiatoday.com/category/nation/2012/04/04/no-tol-issued-aelb-says-it-again/ [Accessed January 15, 2013].

Teoh, S., 2011. Gebeng plant a “time bomb”, say NGOs. *The Malaysian Insider*.

The Access Initiative (TAI), 2012. The Access Initiative. Available at: http://www.accessinitiative.org/ [Accessed September 18, 2013].

The Economic Planning Unit of the Prime Minister’s Department (EPU), 2004. *Development Planning in Malaysia*, Putrajaya.

The Economic Planning Unit of the Prime Minister’s Department (EPU), 2015. Development Plans: Previous Plans. *Official Website*. Available at: http://www.epu.gov.my/en/development-plans/previous-plans [Accessed March 20, 2016].

The Economic Planning Unit of the Prime Minister’s Department (EPU), 2016. Eleventh Malaysia Plan 2016-2020 Documents. Available at: http://rmk11.epu.gov.my/index.php/en/ [Accessed July 10, 2016].

The Economic Planning Unit of the Prime Minister’s Department (EPU), 2013. Official Website of Economic Planning Unit, Prime Minister’s Department Malaysia: History. Available at: http://www.epu.gov.my/en/history.

The Economist, 1992. Let them eat pollution. *The Economist*, (7745), p.82.

The Economist, 2012. Revolution in the Arab world: The twilight of the dictators. *The Economist*. Available at: http://www.economist.com/node/21559905 [Accessed January 20, 2013].

The Malaysian Insider (TMI), 2014a. Kelantan blames illegal land clearing for uncontrolled logging. *Yahoo! News*. Available at: https://sg.news.yahoo.com/kelantan-blames-illegal-land-clearing-uncontrolled-logging-045527717.html?.tsrc=warhol&pt=tAD1SCT8P72012-07-30.html?vp1 [Accessed January 5, 2015].

The Malaysian Insider (TMI), 2014b. Kelantan flood victims plead for aid via social media. Available at: https://sg.news.yahoo.com/kelantan-flood-victims-plead-aid-via-social-media-023736443.html [Accessed 12 July 2015].

The Malaysian Insider (TMI), 2014c. Kelantan MB trapped at home by flood. *The*

Malaysian Insider. Available at: http://www.themalaysianinsider.com/malaysia/article/kelantan-mb-trapped-at-home-by-flood [Accessed January 8 2015].

The Malaysian Insider (TMI), 2014d. Najib recalls holidaying ministers to handle floods. *The Malaysian Insider*. Available at: https://www.yahoo.com/news/najib-recalls-holidaying-ministers-handle-floods-052624457.html?ref=gs [Accessed February 10, 2015].

The Malaysian Insider (TMI), 2015a. Flood damage will cost billions, says Muhyiddin. *Yahoo! News*. Available at https://sg.news.yahoo.com/flood-damage-cost-billions-says-muhyiddin-034736444.html?.tsrc=att [Accessed March 16 2015].

The Malaysian Insider (TMI), 2015b. Kelantan flood like tsunami, recounts doctor. *Yahoo! News*. Available at: https://sg.news.yahoo.com/tsunami-army-doctor-recounts-harrowing-kelantan-flood-110048062.html?nf=1 [Accessed March 7, 2015].

The Malaysian Insider (TMI), 2015c. The new homeless of Kuala Krai. *Yahoo! News*. Available at: https://www.yahoo.com/news/homeless-kuala-krai-005837507.html?ref=gs [Accessed May 10, 2015].

The Malaysian Insider (TMI), 2015d. Weak flood management due to Kelantan's failure to work with NSC, PAC told. *Yahoo! News*.

The National Academies of Sciences Engineering and Medicine, 2005. Joint science academies' statement: Global response to climate change.

The New York City Department of Education, 2016. Enhancing Digital Literacy. *NYC Department of Education*. Available at: http://schools.nyc.gov/community/innovation/ConnectedFoundations/EDL/default.htm [Accessed February 5, 2016].

The Realtime Report, 2010. Malaysians Are Friendliest, With An Avg. 233 Friends in Social Networks. Available at: http://therealtimereport.com/2010/11/02/malaysians-are-friendliest-with-an-avg-233-friends-in-social-networks/ [Accessed October 24, 2015].

The Star, 2014a. DPM wants review of SOP on disaster management. *The Star*

Online: Nation. Available at: http://www.thestar.com.my/news/nation/2014/12/28/dpm-wants-review-of-sop-on-disaster-management/ [Accessed March 11, 2015].

The Star, 2014b. East coast floods: 90,250 evacuees and climbing. *The Star Online*.

The Star, 2014c. Malaysians respond to flood relief call. *The Star Online*. Available at: http://www.thestar.com.my/news/nation/2014/12/28/malaysians-respond-to-flood-relief-call/ [Accessed February 5, 2015].

The Star, 2014d. Three hundred concerned individuals express solidarity with Azmi Sharom. *The Star Online*.

The Sun Daily, 2013. Lynas withdraws libel suit against SMSL. *The Sun Daily*.

The Sun Daily, 2014. Cameron Highlands tragedy caused by greed, illegal land clearing. *The Sun Daily*.

The Sun Daily, 2015. New agency to coordinate government efforts on tackling disasters. *The Sun Daily*.

The Sydney Morning Herald, 2013. Anwar Ibrahim pledges review of Lynas plant. *The Sydney Morning Herald*. Available at: http://www.smh.com.au/video/video-news/video-world-news/anwar-ibrahim-pledges-review-of-lynas-plant-20130222-2eve0.html [Accessed June 24, 2013].

The White House, 2016. Engage and Connect: About the Office of Public Engagement. Available at: https://www.whitehouse.gov/engage/office [Accessed February 20, 2016].

The White House Office of Management and Budget, 2016. Office of E-Government & Information Technology. Available at: https://www.whitehouse.gov/omb/e-gov/ [Accessed January 8, 2016].

The Women's Learning Studio, 2016. The Women's Learning Studio. Available at: https://www.womenslearningstudio.net/ [Accessed January 6, 2016].

The World Bank, 2008. Developing Countries Face Triple Hit from Food, Fuel and Financial Crises. *News and Broadcast*. Available at:

http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:21932865~pagePK:64257043~piPK:437376~theSitePK:4607,00.html [Accessed January 30, 2013].

The World Bank, 2009. Gender in Agriculture Sourcebook: From Knowledge to Action. In *Proceedings from an Expert Consultation, March 16-17*. Washington, D.C.

Third World Network (TWN), 2001. *International Environmental Governance: Some Issues from a Developing Country Perspective. A Working Paper by Third World Network* Environmen., Penang: Jutaprint.

Toovey, L.M., 2010. Rare Earth Investing: World Class Rare Earth Deposits. *Rare Earth Investing News*. Available at: http://rareearthinvestingnews.com/world-class-rare-earth-deposits [Accessed August 16, 2014].

Torgler, B., Garcia-Valiñas, M.A. & Macintyre, A., 2010. *Participation in Environmental Organizations* Routledge., London & New York: Routledge.

Toth, B., 2010. Public Participation and Democracy in Practice - Aarhus Convention Principles as Democratic Institution Building in the Developing World. *Journal of Law Resources & Environmental Law*, 30(2), pp.295–330.

TourHQ, 2014. The Top Five Reasons Why Malaysia is “Truly Asia.” *TourHQ*. Available at: https://www.tourhq.com/article/the-top-five-reasons-why-malaysia-is-truly-asia [Accessed February 19, 2015].

Tourism Malaysia, 2008. Malaysia Truly Asia: History. Available at: http://corporate.tourism.gov.my/trade.asp?page=malaysia_truly&subpage=history [Accessed April 14, 2015].

UNECE, Environmental Policy - Home: Aarhus Convention: About the Convention. Available at: http://www.unece.org/env/pp/contentofaarhus.html.

UNEP Executive Director, 2009. International Environmental Governance: Moving Forward with developing a Set of Options. Note by the Executive Director. In *First meeting of the Consultative Group of Ministers or High-level Representatives on International Environmental Governance*. Belgrade.

United Nations (UN), 1992. *General Assembly: Report of the United Nations*

Conference on Environment and Development, Rio de Janeiro.

United Nations (UN), 2000. United Nations Millennium Declaration. Available at: http://www.un.org/millennium/declaration/ares552e.htm.

United Nations (UN), 2001. Johannesburg Summit 2002: World Summit on Sustainable Development. , (September), pp.1–16.

United Nations (UN), 2012a. *Resilient People, Resilient Planet: A Future Worth Choosing: The Report of the United Nations Secretary-General's High-Level Panel on Global Sustainability*, New York.

United Nations (UN), 2012b. Rio+20 United Nations Conference on Sustainable Development: Press Release. Available at: http://www.un.org/en/sustainablefuture/pdf/rio20 concludes_press release.pdf.

United Nations (UN), 2012c. The Future We Want - Zero draft of the outcome document. Available at: http://www.uncsd2012.org/futurewewant.html.

United Nations (UN), 2013. My World Survey first results: half a million citizens tell the United Nations their priorities. Available at: http://blog.myworld2015.org/2013/05/15/my-world-survey-first-results-half-a-million-citizens-tell-the-united-nations-their-priorities/#more-368.

United Nations (UN), 2015. The World We Want 2015. Available at: http://www.worldwewant2015.org/ [Accessed March 17, 2013].

United Nations Commission on Sustainable Development, 1997. *Rio Declaration on Environment and Development: application and implementation. Report of the Secretary-General*, United Nations Economic and Social Council.

United Nations Committee for Development Policy, 2012. *Policy Note: The United Nations Development Strategy Beyond 2015*, New York.

United Nations Conference on Environment & Development (UNCED), 1992. *Agenda 21: The United Nations Programme of Action from Rio*, United Nations.

United Nations Department of Economic and Social Affairs (UN DESA), 2000. *Building Partnerships for Good Governance: The Spirit and the Reality of South-South Cooperation*, New York.

United Nations Department of Economic and Social Affairs (UN DESA), 2012. *Statistical Annex: Country Classification*.

United Nations Development Group, 2013. *The Global Conversation Begins: Emerging Views for a New Development Agenda*, United States.

United Nations Development Programme (UNDP), 2012. *Realizing the Future We Want for All: Report to the Secretary-General*, New York.

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), 2009. What is Good Governance? Available at: http://www.unescap.org/pdd/prs/ProjectActivities/Ongoing/gg/governance.asp [Accessed November 8, 2012].

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), 2012. I. State of the Environment in Malaysia: A. Malaysian Resources and the Environment: 2. Environmental problems related to industrialization. *Integrating Environmental Considerations into the Economic Decision-Making Process*. Available at: http://www.unescap.org/drpad/publication/integra/volume3/malaysia/3my01a02.htm [Accessed March 20, 2013].

United Nations Economic Commission for Europe (UNECE), Aarhus Convention: Parties to the Aarhus Convention and their dates of ratification. Available at: http://www.unece.org/env/pp/aarhus/map.html [Accessed August 8, 2013].

United Nations Economic Commission for Europe (UNECE), 1998. Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

United Nations Economic Commission for Latin America and the Caribbean (ECLAC), 2016. Negotiating Committee - Principle 10. Available at: http://www.cepal.org/en/negotiating-committee-principle-10 [Accessed February 23, 2016].

United Nations Environment Programme (UNEP), 1972. Declaration of the United Nations Conference on the Human Environment. Available at: http://www.unep.org/Documents.Multilingual/Default.asp?documentid=97&articleid=1503 [Accessed November 6, 2012].

United Nations Environment Programme (UNEP), 1992. Rio Declaration on Environment and Development. Available at: http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163 [Accessed November 2, 2012].

United Nations Environment Programme (UNEP), 2011. *Guidelines for the Development of National Legislation on Access to Information, Public Participation, and Access to Justice in Environmental Matters.*, Nairobi, Kenya.

United Nations Environment Programme (UNEP), 2012a. *Global Environment Outlook 5: Environment for the future we want*, Valletta, Malta.

United Nations Environment Programme (UNEP), 2012b. UNEP Environmental Governance Sub-Programme. Available at: http://www.unep.org/environmentalgovernance/ [Accessed August 18, 2014].

United Nations Environment Programme (UNEP), 2015a. *Putting Rio Principle 10 into Action: An Implementation Guide*, Nairobi, Kenya.

United Nations Environment Programme (UNEP), 2015b. UNEP - Principle 10 and the Bali Guideline: Bali Guideline Implementation Guide Published. Available at: http://www.unep.org/civil-society/Implementation/Principle10/tabid/105013/Default.aspx [Accessed October 10, 2015].

United Nations Office of the High Commissioner for Human Rights (OHCHR), Universal Declaration of Human Rights - In six cross-cutting themes. Available at: http://www.ohchr.org/EN/UDHR/Pages/CrossCuttingThemes.aspx.

Vidal, J., 2012. Many treaties to save the earth, but where's the will to implement them? *The Guardian*.

Voas, D. & Chaves, M., 2016. Is the United States a Counterexample to the Secularization Thesis? *American Journal of Sociology*, 121(5), pp.1517–1556.

Voncken, J.H.L., 2016. *The Rare Earth Elements: An Introduction* Springer B., Delft, The Netherlands: Springer.

Wan Portiah Hamzah, 2000. Environmental Governance in Malaysia. In *International Symposium on Environmental Governance in Asia*. Tokyo: Institute for Global Environmental Strategies (IGES), pp. 31–53.

Wang, H., 2012. Environmental Information Disclosure. In *Getting to Green: A Sourcebook of Pollution Management Policy Tools for Growth and Competitiveness*. Washington, D.C: World Bank Group, pp. 118–125.

Weslosky, T., 2015. China tightens control on the world's supply of rare earths in 2015. *Investor Intel*. Available at: http://investorintel.com/technology-metals-intel/china-tightens-control-worlds-supply-rare-earths-2015/ [Accessed March 18, 2015].

Westerman, D., Spence, P.R. & Van Der Heide, B., 2013. Social Media as Information Source: Recency of Updates and Credibility of Information. *Journal of Computer-Mediated Communication*, 19(2), pp.171–183.

White, D., 2016. White House Celebrates Big Block Cheese Day With Online Q&A Session. *Time: Politics*. Available at: http://time.com/4177369/white-house-big-block-cheese-day/ [Accessed February 2, 2016].

Wong, Y.F., 2013. Worst flood in Kemaman. *Blogger*. Available at: http://pythonjoe.blogspot.co.uk/2013/12/worst-flood-in-kemaman.html [Accessed July 5, 2014].

Woon, L., 2013. Anwar: Lynas can stay if proven safe. *Free Malaysia Today News*. Available at: http://www.freemalaysiatoday.com/category/nation/2013/03/07/anwar-lynas-can-stay-if-proven-safe/ [Accessed April 30, 2014].

Worker, J., 2015. The Best and Worst Countries for Environmental Democracy. *World Resources Institute*. Available at: http://www.wri.org/blog/2015/05/best-and-worst-countries-environmental-democracy [Accessed January 20, 2016].

World Commission on Environment and Development, 1987. *Our Common Future*, Oxford and New York: Oxford University Press.

World Culture Encyclopedia, 2016. World Cultures: Malaysia. *Countries and their Cultures*. Available at: http://www.everyculture.com/Ja-Ma/Malaysia.html

[Accessed January 9, 2016].

World Resources Institute (WRI), 2003. *World Resources 2002-2004*, Washington, D.C.

World Resources Institute & The Access Initiative, 2015. Environmental Democracy Index. Available at: http://www.environmentaldemocracyindex.org [Accessed June 22, 2015].

Worldometers, 2014. Countries in the world (ranked by 2014 population). Available at: http://www.worldometers.info/world-population/population-by-country/.

WWF, 2012. *Living Planet Report 2012 Special Edition: On the road to RIO+20*, Gland, Switzerland.

WWF-Malaysia, 2015. Threats to rivers: Major threats to our rivers…. *WWF-Malaysia*. Available at: http://www.wwf.org.my/about_wwf/what_we_do/freshwater_main/freshwater_conserving_river_basins/threats_to_rivers/ [Accessed October 17, 2015].

XPRIZE Foundation, 2015. Google Lunar XPRIZE. Available at: http://lunar.xprize.org/ [Accessed January 22, 2015].

Yap, T.G., 2015. Putrajaya says won't appeal The Edge case, will abide by court decision. *Malay Mail Online*.

YB Fuziah Salleh (on behalf of the Concern Citizens of Kuantan), 2012. Stop Lynas! *Care2 Petitions*. Available at: http://www.thepetitionsite.com/1/stop-lynas/.

Yeoh, A., 2015. Malaysia: Facing the Challenges of Sustainable Development. *The Asia Foundation*. Available at: http://asiafoundation.org/in-asia/2015/10/07/malaysia-facing-the-challenges-of-sustainable-development/ [Accessed February 2, 2016].

Yik, D.J. et al., 2012. Trends in Intensity and Frequency of Precipitation Extremes in Malaysia from 1951 to 2009 (Abstract). In *Third National Conference on Extreme Weather and Climate Change: Understanding Science and R&D Capacity Needs, 8-9 October*. Petaling Jaya.

Yin, R.K., 2009. *Case Study Research: Design and Methods* Fourth Edi., SAGE

Publications.

Yin, R.K., 2003. *Case Study Research: Design and Methods* 3rd ed., Thousand Oaks, London, New Delhi: SAGE Publications.

Yong, N., 2011. Malaysian Town Recalls Rare Earth Mining Woes. *Voice of America (VOA) News*. Available at: http://www.voanews.com/content/malaysian-town-recalls-rare-earth-mining-woes-133330653/147816.html [Accessed October 21, 2013].

Zaharah Elias, Zaiton Hamin & Mohd Bahrin Othman, 2013. Sustainable Management of Flood Risks in Malaysia: Some Lessons from the Legislation in England and Wales. *Procedia - Social and Behavioral Sciences (Asia Pacific International Conference on Environment-Behaviour Studies, 4-6 September 2013)*, 105, pp.491–497.

Zaiton Hamin, Mohd Bahrin Othman & Zaharah Elias, 2013. Floating on a Legislative Framework in Flood Management in Malaysia: Lessons from the United Kingdom. In *Procedia - Social and Behavioral Sciences: AMER (ABRA malaysia) International Conference on Quality of Life, AicQoL2013Langkawi*. Langkawi: Elsevier, pp. 277–283.

Zakaria, H.A., 1989. Malaysia: Quasi Democracy in a Divided Society. In L. Diamond, J. J. Linz, & S. M. Lipset, eds. *Democracy in Developing Countries: Asia*. Boulder, CO: Lynne Rienner, pp. 347–381.

Zepf, V., 2013. *Rare Earth Elements* Springer T., Berlin Heidelberg: Springer-Verlag.

Zepf, V. & Reller, A., 2012. Chances and risks of using rare earth metals. *Proceedings of the Institution of Civil Engineers*, 165(WR1), pp.3–11.

Zolkepli, F. & Sivanandam, H., 2014. Bar: Azmi's remarks not disrespectful. *The Star Online*.

Zukang, S., 2011. High-Level Dialogue on Institutional Framework for Sustainable Development: Remarks by Mr. Sha Zukang, Under-Secretary-General for Economic and Social Affairs, Secretary-General of The 2012 UN Conference on Sustainable Development. Available at: http://www.un.org/en/development/desa/usg/statements/uncategorized/2011

/07/high-level-dialogue-on-institutional-framework-for-sustainable-development.html [Accessed November 15, 2012].

Zulkarnain A. Hatta & Isahaque Ali, 2013. Poverty Reduction Policies in Malaysia: Trends, Strategies and Challenges. *Asian Culture and History*, 5(2), pp.48–56.

APPENDIX

1. LIST OF LICENSES/APPROVALS REQUIRED FOR LYNAS TO OPERATE LAMP IN MALAYSIA[289]

- Environmental Impact Assessment approval by Department of Environment (DOE).
- Quantitative Risk Assessment approval by DOE.
- Public consultation for EIA is not required by DOE. However, Lynas claims that it has voluntarily carried out community engagement sessions involving neighbouring industries, government agencies and the Malaysian Nature Society.
- Project approval from the State Government.
- Project review & Letter of No Objection from state technical agencies including Department of Drainage and Irrigation, Department of Works, Department of Fisheries, Department of Minerals and Geoscience, Department of Occupational Safety and Health.
- Approval of Environmental Management Plan (EMP) for construction phase by DOE.
- Approval of EMP for operations phase by DOE.
- Approval of Onsite Emergency Response Plan by DOE.
- Approval of Offsite Emergency Response Plan including for Port of Kuantan by DOE.
- Written Approvals for wastewater treatment plant, sewage treatment plant, waste gas treatment system and residue storage facility from DOE and AELB.
- RMP, Medical Surveillance Plan and Transport Management Plan approval from AELB.
- Decontamination & Decommissioning Plan approval from AELB.

[289] This list was provided by a Lynas representative, with minor changes made by the author for the purpose of ensuring clarity.

- Closure or Abandonment Plan approval from the AELB and DOE.
- Class A Milling License obtained for Siting & Construction Phases from AELB.
- Class A Milling License for Pre-Operation and Operation Phases from AELB
- Certificates of Fitness for all equipment & machinery from Department of Occupational Safety and Health (DOSH)
- Monthly monitoring of river water quality, ambient air quality, boundary noise and groundwater quality and reporting to DOE
- Requirement for 12 months of radiological monitoring data and reporting to AELB
- Radiation Protection Officer and Licensing Requirements with AELB
- Notification to the Department of Minerals and Geosciences for import of concentrate from Australia.

2. PHOTO TAKEN DURING VISIT TO LAMP IN GEBENG INDUSTRIAL PARK

A sign at the entrance of the estate states "*Kawasan Perindustrian Gebeng*" (meaning "Gebeng Industrial Area").



3. PHOTO TAKEN DURING VISIT TO LAMP IN GEBENG INDUSTRIAL PARK

A screen installed at the entrance of the plant displays details of air quality in the area. The DOE explained that its enforcement officers record & monitor this data.



4. PHOTO TAKEN DURING VISIT TO LAMP IN GEBENG INDUSTRIAL PARK

Samples of the WLP, FGD and NUF – residues or “waste” produced at LAMP as a result of refining REEs.



5. PHOTO TAKEN DURING VISIT TO LAMP IN GEBENG INDUSTRIAL PARK

Samples of Lynas' raw materials (rare earth concentrates) and final product of LAMP (refined and separated REEs)



6. PHOTO TAKEN DURING VISIT TO LAMP IN GEBENG INDUSTRIAL PARK

The image below was captured by the author at one of the location points along the Balok river (situated away from the Gebeng Industrial Park), where DOE officers collect samples of the river water to monitor the water quality. The author was informed that all the wastewater that has been processed and treated by the industries operating in the Gebeng industrial park are released into this river, hence the need to regularly monitor it. Surprisingly, several people were spotted fishing at this exact location, across from where this image was captured.



7. PHOTO TAKEN DURING VISIT TO LAMP IN GEBENG INDUSTRIAL PARK

In visiting LAMP, the author was accompanied by representatives from the DOE and met with the Managing Director of Lynas Malaysia as well as several Lynas engineers and rare earth experts.



8. PHOTO TAKEN DURING AUTHOR'S VISIT TO THE MALAYSIAN ENVIRONMENTAL NGO (MENGO) HEADQUARTERS IN KUALA LUMPUR FOR PURPOSE OF INTERVIEWING MENGO REPRESENTATIVES



9. BRIEF DEFINITIONS OF DIGITAL LITERACY SKILLS, AS EXPLAINED BY THE WOMEN'S LEARNING STUDIO (LEVINSON 2015)

From Harold Jarche (http://jarche.com): Personal Knowledge Mastery (PKM)

Seek: Develop media literacy to seek out relevant, reliable, and sound resources using trusted sources and triangulation of data. This lessens cognitive overload.

Sense: What did you learn? What new knowledge did you gain? How will you use this new knowledge?

Share: Social intelligence is built through sharing your sense-making with others. This leads to new knowledge creation and the development of useful, purposeful social networks.

From Howard Rheingold (http://rheingold.com): Net Smart

Develop Infotention: A means of training your attention to make the best use of your time and online resources. It is a combination of attentional discipline and information-handling tools. This is a method for turning information overload into knowledge navigation.

Crap Detection: Developing the tools and routines to tell accurate online information from inaccurate information, misinformation, and disinformation.

Online Participation: Knowing how to blog, tweet, wiki, search, comment, innovate, program, and/or organize online to share your learning online with others.

Social-Digital Know-How: The Arts and Science of collective intelligence. Knowing how to interact with others online, including knowing how to use online tools to do it, so ideas can be exchanged, shared, and developed in organized, useful ways.

Building Online Networks: Growing an online Personal Learning Network (PLN) to deepen, enhance, accelerate personal learning, and to add to the growing collective learning of the network.

10. SAMPLE COVER LETTER USED FOR FORMAL INTERVIEWS

Research Questionnaire

You are invited to participate in an environmental research project for which you are asked to complete a questionnaire, as enclosed. The information you provide will be used to enhance and improve the research findings and contribute to a better understanding of environmental access rights in Malaysia (i.e. access to information and public participation in environmental decision-making). You agree to participate in this research project by answering the following questionnaire. Your information will remain strictly confidential.

The research study intends to abide by all commonly acknowledged ethical codes. Only the researcher and direct supervisor will have access to any data collected during this study.

Please indicate below by marking "X" whether you permit the researcher to cite your name and position to the answers you provide, or prefer to remain anonymous:

I give permission to the researcher to cite my answers along with my name and position [ ]

I prefer my name and position to remain anonymous in this research [ ]

Please submit this questionnaire together with your answers to the researcher by e-mail. You may also contact the researcher if you have any questions or feedback.

Thank you for your time. Your participation in this research study is very much appreciated.

11. SAMPLE E-MAIL USED TO INVITE MEMBERS OF THE MALAYSIAN PUBLIC TO PARTICIPATE IN RESEARCH SURVEY

Dear Sir/Madam,

You have been invited to participate in an environmental research project in which you will be asked to complete a questionnaire. The questions relate to the research topic on environmental access rights in Malaysia (i.e. access to environmental information, public participation in environmental decision-making and access to justice on environmental matters). The information you provide will be used to enhance and improve the research findings and contribute to a better understanding of the issues surrounding the research topic.

Your answers will not be released to anyone and will remain anonymous. All responses you provide for this study will remain confidential. Only the researcher and direct supervisor will have access to view any data collected during this research.

The research intends to abide by all commonly acknowledged ethical codes. You agree to participate in this research project by filling the following questionnaire. Your participation is voluntary and you may withdraw from this survey any time you wish. Nevertheless, please try to complete the survey to the best of your ability as your voice and opinions are highly valued in this research project. If you have any questions, please ask the researcher listed above.

Thank you for your time and participation.

Kind regards,
Syafrina Sharif
Centre for Environmental Policy
Imperial College London

12. SURVEY QUESTIONNAIRE

1. Are you a Malaysian citizen?

a) Yes *(Please proceed to the next question)*

b) No *(End questionnaire. Thank you.)*

2. What is your gender?

a) Male

b) Female

3. What is your age?

a) Below 18 years old.

b) Between 19-29 years old.

c) Between 30-39 years old.

d) Between 40-49 years old.

e) Between 50-60 years old.

f) Above 60 years old.

4. What is your religion?

a) Islam

b) Buddhism

c) Hinduism

d) Christianity

e) Sikhism

f) Other (please specify)_____

g) Prefer not to say

5. Please specify your ethnicity (race):

a) Malay
b) Chinese
c) Indian
d) Mixed
e) Other (please specify)_____
f) Prefer not to say

6. In which sector do you work?

a) Public Sector
b) Private sector
c) Academia
d) Non-profit Sector
e) I'm a student
f) Self-employed
g) I'm a homemaker
h) I'm unemployed
i) I'm retired
j) Other (please specify)

7. What is the highest degree or level of school you have completed?

a) Primary school
b) Secondary school
c) Trade/technical/vocational training
d) Diploma
e) Some university credit, no degree
f) Associate degree
g) Bachelor's degree
h) Master's degree
i) Doctorate degree / Ph.D
j) No schooling

8. Where do you reside?

a) City
b) Small town
c) Suburbs
d) Rural

9. How would you rate the overall quality of the environment in Malaysia *(please mark one answer for each column)*:

	(a) 20 years ago?	**(b) 10 years ago?**	**(c) Now?**
Excellent			
Good			
Fair			
Poor			
Not applicable			

10. Where did you obtain your knowledge and information on environmental issues 20 years ago? (*you may choose up to FIVE top preferences OR select the **first box** if this question is not applicable to you)*

a) Not applicable ☐
b) Books ☐
c) Magazines ☐
d) Newspaper (print) ☐
e) Newspaper (online) ☐
f) Television ☐
g) Radio ☐

h) Environmental-related websites ☐

i) Blogs ☐

j) Social Media (Facebook, Twitter, etc.) ☐

k) Training courses ☐

l) Academic institution (lectures/classes) ☐

m) Conferences & seminars ☐

n) Word of mouth ☐

o) Other (please specify) _____ ☐

11. Where did you obtain your knowledge and information on environmental issues 10 years ago? (*you may choose up to FIVE top preferences)*

a) Books ☐

b) Magazines ☐

c) Newspaper (print) ☐

d) Newspaper (online) ☐

e) Television ☐

f) Radio ☐

g) Environmental-related websites ☐

h) Blogs ☐

i) Social Media (Facebook, Twitter, etc.) ☐

j) Training courses ☐

k) Academic institution (lectures/classes) ☐

l) Conferences & seminars ☐

m) Word of mouth ☐

n) Other (please specify) _____ ☐

o) Not applicable ☐

12. Where do you obtain your knowledge and information on environmental issues NOW? (*you may choose up to FIVE top preferences)*

a) Books ☐

b) Magazines ☐

c) Newspaper (print) ☐

d) Newspaper (online) ☐

e) Television ☐

f) Radio ☐

g) Environmental-related websites ☐

h) Blogs ☐

i) Social Media (Facebook, Twitter, etc.) ☐

j) Training courses ☐

k) Academic institution (lectures/classes) ☐

l) Conferences & seminars ☐

m) Word of mouth ☐

n) Other (please specify) _____ ☐

o) Not applicable ☐

13. Thinking about the various ways in which information is delivered, in what form would you prefer to receive information on the environment? *(select all that apply)*

a) Photos
b) Text/Writing
c) Video/Movie
d) Infographics (i.e. a visual image such as a chart or diagram used to represent information or data).
e) In person (i.e. face to face) through talking and listening to someone else.
f) Other (please specify) _____

14. In your opinion, are Malaysians generally more aware of environmental issues today compared to 10 years ago?

a) Yes
b) No
c) Same
d) Not sure
e) Not applicable

15. Please indicate any of the following actions you have done with regard to expressing concern for the environment (select all that apply):

a) Contacted a politician, government or local government official ☐
b) Worked in a political party or action group ☐
c) Worn or displayed a campaign badge/sticker ☐
d) Signed a petition ☐
e) Taken part in a lawful public demonstration ☐

f) Boycotted certain products ☐

g) Become a member of an environmental club/society ☐

h) Apply sustainable practices as much as possible at home ☐

i) Discuss environmental issues with family/friends/co-workers ☐

j) Other (please specify)_____ ☐

16. Do you think the Malaysian Government is doing too much, too little, or about the right amount in terms of **ACTIVELY PROVIDING INFORMATION REGARDING THE ENVIRONMENT**?

a) Too much
b) Too little
c) About the right amount
d) Don't know

17. Do you think the Malaysian Government is doing too much, too little, or about the right amount in terms of **CREATING PROGRAMMES TO RAISE AWARENESS ON ENVIRONMENTAL ISSUES?**

a) Too much
b) Too little
c) About the right amount
d) Don't know

18. Do you think the Malaysian Government is doing too much, too little, or about the right amount in terms of **CONSULTING CITIZENS IN DECISIONS THAT AFFECT THE ENVIRONMENT?**

a) Too much
b) Too little
c) About the right amount
d) Don't know

19. Do you think the Malaysian Government is doing too much, too little, or about the right amount in terms of **ENFORCING ENVIRONMENTAL LAWS IN MALAYSIA?**

e) Too much
f) Too little
g) About the right amount
h) Don't know

20. Would you submit concerns you may have regarding the environment?

a) Yes *(please proceed to question 21)*
b) No *(please proceed to question 23)*
c) Don't know *(please proceed to question 23)*

21. If yes, where or to whom would you most likely submit your concerns to? (You may choose up to THREE top preferences)

a) Local parliamentary representative/MP ☐
b) Relevant Government Ministry/department ☐
c) The Prime Minister of Malaysia ☐
d) Local Printed Media (Newspaper, Magazines) ☐
e) Local Broadcasted Media (Television, Radio) ☐

f) School/University ☐

g) Non-governmental organization (NGO) ☐

h) Relevant Corporation ☐

i) Foreign/International Media ☐

j) Online 'netizens' (i.e. the community of internet users) ☐

k) Other (please specify)_____ ☐

22. Through which modes of communication would you prefer to submit concerns regarding the environment? *(Please choose top 3 preference)*

a) Written letter ☐

b) E-mail ☐

c) Social Media (Facebook, Twitter, YouTube, etc.) ☐

d) Blog ☐

e) Telephone ☐

f) Other (please specify) _____ ☐

Please rate the following statements as below:

5 Strongly Agree
4 Agree
3 Neutral
2 Disagree
1 Strongly Disagree

23. I feel responsible for the protection of the environment ☐

24. I care for the environmental wellbeing of the future generation ☐

25. I would request information on the environment from the Government ☐

26. I would request information on the environment from NGO(s) ☐

27. I would request information on the environment from corporation(s) ☐

28. I would like to know if anything bad happens to the environment even if it doesn't happen in my area ☐

29. If given the opportunity, I would participate in peaceful and lawful public protests to address environmental issues of concern ☐

30. I feel that if I express my concerns on the environment, the Government will listen to me ☐

31. I feel that if I express my concerns on the environment, the NGO(s) will listen to me ☐

32. I feel that if I express my concerns on the environment, the corporation(s) will listen to me ☐

33. I would submit complaints on activities that I think will negatively impact the environment ☐

34. I know where to go to complain on problems related to environmental matters ☐

35. Do you trust the Malaysian Government in handling matters concerning the environment?

a) Yes
b) No
c) Sometimes
d) Don't know
e) Prefer not to say

36. Do you trust the Malaysian judicial system and courts to handle cases involving the environment?

a) Yes
b) No
c) Sometimes
d) Don't know
e) Prefer not to say

37. Do you trust the Malaysian media in providing reliable information concerning the environment?

a) Yes
b) No
c) Sometimes
d) Don't know
e) Prefer not to say

38. Do you think that patriotism and having a sense of "*cintakan negara*" is important in terms of being environmentally aware and responsible?

a) Yes
b) No
c) Don't know

What are your opinions on the Government's efforts to transform for the better through its various transformation programmes? (GTP, ETP, etc.). *Please rate the statements below in the boxes provided as follows:*

5 Strongly Agree
4 Agree
3 I don't know
2 Disagree
1 Strongly Disagree

39. I support the Government's efforts to transform ☐

40. I think that more effort is needed to effectively transform ☐

41. Since it was implemented, I have seen improvements in the way Government functions and delivers services to the public ☐

42. I support the Governments efforts to connect with citizens through social media (Facebook, Twitter, YouTube, etc.) ☐

43. The Government should listen to advice and suggestions of qualified experts rather than layman citizens ☐

44. I feel that the transformation programmes do not benefit me ☐

45. I don't understand what the transformation programmes are for ☐

46. I would become proactive in taking action on environmental issues.....

You may choose a maximum of 5 statements below by marking "X" in the boxes provided.

a) If it concerns the health and safety of myself and my family ☐

b) If everyone else is doing it ☐

c) If the Government listens to me ☐

d) If I can obtain financial profit out of it ☐

e) If the activity is fun ☐

f) If I don't get into trouble for doing it ☐

g) If it makes me famous ☐

h) If I can influence others to take action ☐

i) If it fits into my schedule ☐

j) If it is happening in my neighborhood ☐

k) If it gives me a sense of purpose ☐

l) If it is in line with my religious beliefs ☐

m) I prefer not to be proactive in taking action on environmental issues ☐

47. Would you take legal action against those who cause harm to the environment? (*Please circle one answer)*

a) Yes *(Please proceed to question 48)*

b) No *(Please proceed to question 49)*

48. What would push you to take legal action against those who cause harm to the environment? *(Please mark relevant answers as "X" in the boxes available)*

a) If I can afford to pay for a lawyer ☐

b) If I can get support from other groups of people ☐

c) If the case involves issue of health and safety that affects me ☐

d) If taking action would make people more aware of what's going on ☐

e) If taking action would bring justice to those deserve it ☐

f) Other reason *(please specify)*_____ ☐

49. What are reasons for you not to take legal action against those who cause harm to the environment? *(Please mark relevant answers as "X" in the boxes available)*

a) Because I don't want to have to pay the legal fees ☐

b) Because I don't know how to go about taking legal action ☐

c) Because there is no court that deals with environmental issues ☐

d) Because I don't want to go through the hassle ☐

e) Because I don't want to get into trouble ☐

f) Because I don't care ☐

g) Other reason *(please specify)*_____ ☐

50. If you were given more opportunities to take part in environmental decision-making, would you be more involved?

a) Yes
b) No
c) Don't know

51. Have you ever heard, read or come across any information regarding the situation involving Lynas that occurred in Malaysia?

a) Yes *(please proceed to question 52)*
b) No *(Please proceed to question 71)*

52. Do you live in Kuantan?

a) Yes
b) No

53. From where did you **FIRST** receive information on the situation involving Lynas? *(Please circle only one answer)*

a) Local Media (Newspaper, TV, Radio)
b) Foreign Media (Newspaper, TV, Radio)
c) Social Media (Facebook, Twitter, YouTube, etc.)
d) Government website
e) Non-government website
f) Academic institution
g) Workplace
h) Community leader/political representative
i) Talking to neighbours/friends
j) Talking to family members

What do you know so far about the Lynas Advanced Materials Plant (LAMP)? *(Read the following statements below and please indicate **Yes, No,** or **Don't know**)*

54. It produces nuclear power

a) Yes
b) No
c) Don't know

55. It used to be located in Bukit Merah

a) Yes
b) No
c) Don't know

56. It is a rare earth refinery

a) Yes
b) No
c) Don't know

57. The materials that the plant is processing comes from Australia

a) Yes
b) No
c) Don't know

58. The plant is owned by a Malaysian company

a) Yes
b) No
c) Don't know

59. It is now located in Kuantan, Pahang

a) Yes
b) No
c) Don't know

60. After hearing about what happened, did you make efforts to find out more about the situation involving Lynas?

a) Yes *(please proceed to question 61)*
b) No *(please proceed to question 69)*

If yes, how would you rank your access to information on the Lynas situation from the following sources?

61. Lynas Corporation

a) Easy
b) So-so
c) Difficult
d) Didn't try this source

62. Ministry of Science, Technology and Innovation (MOSTI)

e) Easy

f) So-so

g) Difficult

h) Didn't try this source

63. Ministry of International Trade and Industry (MITI)

a) Easy

b) So-so

c) Difficult

d) Didn't try this source

64. Ministry of Natural Resources and Environment (NRE)

a) Easy

b) So-so

c) Difficult

d) Didn't try this source

65. Academy of Sciences Malaysia (Akademi Sains Malaysia)

a) Easy

b) So-so

c) Difficult

d) Didn't try this source

66. Atomic Energy Licensing Board (AELB)

a) Easy

b) So-so

c) Difficult

d) Didn't try this source

67. International Atomic Energy Agency (IAEA)

a) Easy
b) So-so
c) Difficult
d) Didn’t try this source

68. Nuclear Malaysia (Agensi Nuklear Malaysia)

a) Easy
b) So-so
c) Difficult
d) Didn’t try this source

69. Do you agree or disagree with the construction and running of LAMP?

a) Agree
b) Disagree
c) Don’t know
d) Prefer not to say

70. What do you think of the plant now that it is running and producing Lynas products?

a) I think it's not safe, and must be immediately stopped and shut down.
b) I think it's not safe, but since it is already running, I can accept it as long as it is strictly monitored to prevent any mishaps.
c) I think it's safe, but should be closely monitored by relevant authorities and follow regulations.
d) I think it's safe and that there is nothing more to worry about.
e) It has no impact on me as it is situated far away.
f) It doesn't concern me so I don't have any opinion on this.
g) I think it's a waste of time to discuss about LAMP.
h) Don't know.
i) Prefer not to say.

71. Do you have any comments/feedback/opinions to express regarding the survey questions or the topics raised in the survey? Please provide them in the space below. Thank you very much for your active participation and contribution in this research project!