



Analysis

Reasons for Adoption and Advocacy of the Ecosystem Services Concept in UK Forestry



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ABSTRACT

The ecosystem services concept has enjoyed widespread interest and recognition in recent years. In particular, the monetary valuation and commodification of ecosystem services in form of payments for ecosystem services schemes and the development of new markets for ecosystem services has appreciated large popularity. However, who is behind this strong momentum towards ecosystem services and especially why is less well known. In this paper I aim to shed light on this by looking specifically at advocates of the concept of ecosystem services, using forestry in the United Kingdom (UK) as an example. I explore the motivations for accommodating or actively pursuing ecosystem services thinking in this important sector through interviews with forestry and conservation experts. Four prominent groups with a specific interest in the ecosystem services concept in the context of UK forestry are governmental organisations, non-governmental conservation organisations, private forest owners, and the timber and forest industry. These stakeholder groups are interested in this new perspective, chiefly, but not exclusively, because (1) it is required under international obligations; (2) it is in line with dominant market political philosophy; (3) it holds the promise to include the environment more fully into prevailing economic decision-making processes; (4) it can help to draw more attention to biodiversity conservation; (5) it holds the promise of new sources of income from both public and private sources; and (6) it can be used as a convenient argument to promote further tree planting. However, these groups have different, but frequently overlapping reasons for pursuing this new perspective. The results provide a baseline and important insights into who was embracing ecosystem services thinking and why during the early years of the adoption of this approach in the UK.

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1. Introduction

The ecosystem services concept has enjoyed widespread interest and recognition in recent years. In particular, the monetary valuation and commodification of ecosystem services in form of payments for ecosystem services schemes and the development of new markets for ecosystem services has appreciated large popularity (Gomez-Baggethun and Ruiz-Perez, 2011; Kull et al., 2015). However, in the UK forestry sector, identifying and placing a value on the non-marketed benefits of forests is not an entirely new concept. In fact, the notion of nature's services has been around since at least the 1960s under various names, such as multiple forest benefits and non-marketed benefits (Mather, 2001; Quine et al., 2013). The expectation then was that by highlighting the monetary value of the non-timber benefits provided by forests these could be more fully taken into account in decision-making (NAO, 1986). In 1972, for instance, the treasury, in response to criticisms to the government's state-funded reforestation programme, reviewed the overall costs and benefits of

British forestry. The review gave particular attention to the non-commercial forest benefits of landscape amenity and recreation (HM Treasury, 1972). Remarkably, the study concluded that even though afforestation failed to produce the 10% return expected from public sector investment, forestry would still be economically viable when recreation and amenity benefits were taken into account (HM Treasury, 1972; Raum and Potter, 2015). In the 1990s, there had been another shift in UK forestry policy, this time towards balancing the economic (i.e. timber), social and environmental objectives of forestry (Quine et al., 2013). Other policy areas, especially those linked to biodiversity conservation, climate change and renewable energy were also increasingly affecting land use and forestry policy (Raum, 2017). Moreover, the growing influence of market-based approaches in international forestry agreements (e.g. MCPFE, 2015; UN, 2007), and the focus on ecosystem services and their contribution to human wellbeing in the Millennium Ecosystem Assessment (MA, 2005), has created a particularly strong interest in the goods and services that nature, including her forests, provides (Chaudhary et al., 2015).

This is indicated by a gradual shift in language in international and national documents. For example, whereas the voluntary UN Forest Principles (UNCED, 1992) stressed the need for the “incorporation of

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environmental costs and benefits into market forces and mechanisms in order to achieve forest conservation and sustainable development”, the Non-legally Binding Instruments on all Types of Forests (NLBI) (UN, 2007) specifically emphasised the importance of ecosystem services valuation and the marketplace (Humphreys, 2009). The latter encouraged the “recognition of the range of values derived from goods and services provided by all types of forests and trees outside forests, as well as ways to reflect such values in the marketplace, consistent with relevant national legislation and policies” (UN, 2007). In Europe, the Ministerial Conference on the Protection of Forests (MCPFE) process in its 2015 Madrid Ministerial Resolution 1 also committed itself to “incorporating the value of forest ecosystem services in a green economy”, including through tools such as “market-based instruments and payments for ecosystem services” (MCPFE, 2015). The UK forestry sector has been influenced by these trends. The Government’s response to the 2012 Independent Panel on Forestry UK Forestry Report (IDPF, 2012), for instance, stressed the “scope for developing new markets” for the provisioning of non-marketed services (Defra, 2013). Moreover, in recent years, a number of forestry workshops and conferences have been convened to explore how best to apply ecosystem services thinking to forestry policy and practice (Mason and Mencuccini, 2014; Raum and Potter, 2015). The Forestry Commission also made a clear reference to ecosystem services in its revised 2011 UK Forestry Standard¹ (Forestry Commission, 2011). However, the explicit reasons and motivations for this growing interest in ecosystem services, their valuation and marketization beyond the above and other international stimuli are less well understood.

The literature has identified a number of advocates of the ecosystem services concept; only very few papers, however, have also provided empirical evidence for the reasons of their specific interest. Ecologists and economists generally tend to be considered as the leading academic proponents of ecosystem services (e.g. Braat and De Groot, 2012; Chaudhary et al., 2015). Chaudhary et al. (2015), for instance, demonstrated how the concept emerged from the research of US economists and ecologists who were concerned about natural resource depletion and environmental degradation. The subsequent inclusion of ecosystem services into global and national ecosystem assessments (e.g. MA, 2005; UK NEA, 2014) to highlight the linkages between ecosystem changes and human well-being, has naturally also been led by ecologists (Kull et al., 2015). Conversely, a number of non-academic ecosystem services advocates and users have been acknowledged too. Sullivan (2009), for example, pointed out how international conservation charities have embraced market-based approaches to financing conservation activities. The Nature Conservancy, Conservation International, and the World Wide Fund for Nature, especially, were embracing payments for ecosystem services (PES) as a key tool for generating and distributing the money required for conservation (Sullivan, 2009). Moreover, Fisher and Brown (2014) observed how major conservation organisations in the US, UK, and Uganda have interpreted and used the ecosystem services concept, especially in the context of forest conservation. Sullivan (2009) also highlighted the new investment opportunities from innovative markets for ecosystem goods and services and various other ecological products, and the accompanying array of brokers, investors, and financial advisors promoting these. In particular, the new trade in carbon, following the ratification of the UN Framework Convention on Climate Change’s (UNFCCC) Kyoto Protocol in 2005, has provided a model on which other new market schemes could be developed. Indeed, websites abound with names such as ‘Ecosystem Marketplace’, ‘Species Banking’, and ‘Climate Change Capital’ (Sullivan, 2009).

Still, the concept of ecosystem services seems to have been used in various ways by a wide range of stakeholders and to justify and support different types of activities and objectives (Kull et al., 2015) which tend

to be less well understood. In this work, I attempted to fill this gap in the contemporary ecosystem services debate which has placed much emphasis on the theoretical and practical applications of the concept and less on who is using it and the reasons for this. In the UK, for example, ecosystem-based approaches only began to be formally introduced in 2007 when the Department of Environment, Food and Rural Affairs (Defra) produced its first ecosystem approach action plan (Defra, 2007b) and supplementary practical guidance on valuing ecosystem services (Defra, 2007a). Although there have since been numerous activities, frequently linked to the UK National Ecosystem Assessment (UK NEA) (NEA, 2011), and various policy statements of intent around ecosystem services, relatively little is known about how the concept has actually been embraced by stakeholders and of their reasons and motivations, especially on the sector level. The forestry sector offers a particularly interesting case to examine ecosystem services advocacy and use, given its long history of interventions framed within a series of forestry policy paradigms (Raum and Potter, 2015); each devised and promoted to deal with competing interests of numerous stakeholders who are using the same resource for different purposes (Grumbine, 1994). The main aim of this study, therefore, was to investigate why certain interested parties seem to have been actively promoting the idea of ecosystem services during the early years of the concept’s adoption, using the forestry sector as an example. The emphasis was on examining why a number of stakeholder groups were interested in the concept of ecosystem services rather than on producing a comprehensive quantitative understanding of who had an interest in this new concept and to which degree.

2. Approach and Methods

For the purpose of this research, I used a qualitative and interpretive approach centred on textual information, to better understand the reasons for certain stakeholders’ particular interest in the ecosystem services concept. The emphasis was on the interpretation of the text derived from interviews and placed in context. Interpretivists propose that social action, processes and phenomena must be understood by comprehending individuals’, groups’ or organisations’ motives and views (O’Brien, 2003). The advantage of this approach is that it provides substantive information on stakeholder motivations and perspectives in a real life situation (Savin-Baden and Howell-Major, 2013). This study builds on an unpublished exploratory analysis (Raum, 2016) of stakeholders with an interest in and an influence over woodland ecosystem services in the UK. The analysis suggested that there was a difference between stakeholders who were interested in the actual ecosystem service(s) and those who were interested in the concept of ecosystem services for various reasons. The former group was explored in more detail in the exploratory work; the latter is given particular attention here. They included governmental organisations, such as the Defra and the Forestry Commission, conservation organisations, including the Royal Society for the Protection of Birds (RSPB) and the Wildlife Trust(s), private woodland owners, and the timber industry. For the purpose of this analysis, they were placed into four groups.

The empirical analysis was based on textual data obtained from interviews conducted between April 2013 and July 2014. 12 UK based forestry and conservation experts were selected through a combined purposive and snowball sampling approach and then interrogated through semi-structured interviews. Typically, I questioned experts with an understanding of both UK forestry and ecosystem services. The interview candidates consisted of a cross-section of respondents from governmental organisations ($n = 6$), non-governmental conservation organisations ($n = 4$), and private sector forestry organisations ($n = 2$), one of which represented the timber industry, the other private forest owners. The interviews were conducted both over the phone and in person, recorded and then fully transcribed. The analysis was based on the following guiding interview questions:

¹ The first ‘UK Forestry Standard’, published by the Forestry Commission in 1998 outlined the government’s approach to sustainable forestry (Forestry Commission, 1998).

- Who is advocating and adopting ecosystem services thinking in UK forestry and why?
- What is their interest in promoting an ecosystem services approach?
- What are the policy and management benefits of an ecosystem services framework in forestry in the UK?

The interview transcripts were analysed through hand annotated codes, searching for key words and themes, and presented through a qualitative narrative (Denscombe, 2014), supported by verbatim quotes from the interview transcripts. In the following section, I present several active ecosystem services advocacy groups with a stake in UK forestry. Interviewees were reflecting on their own group or organisation, but also on others'.

3. Results

The four stakeholder advocacy groups examined in this study, and summarised in Table 1, are governmental organisations, forest owning conservation NGO's, private land owners, and the timber and forest industry. These stakeholders tend to be interested in ecosystem services either 'rhetorically or actually', to support their objectives and activities.

It should be noted that due to the devolution of political administration in the UK, which began in 1998, it was not always possible to keep a purely UK focus; at the time of interviewing, the boundaries had not always been clear. Indeed, administrative competencies were still evolving, and many governmental organisations were still in the midst of restructuring their boundaries. So were policy and legislation on forestry related issues in the newly devolved areas. The administration of Defra and its agencies, here namely the Forestry Commission, was changing, and was at various stages of devolution. In fact, the Forestry Commission was, at the time when approximately half of the interviews had been undertaken, still the Commission for England, Scotland and Wales. Nevertheless, the two main ministerial governmental departments associated with forestry, Defra and the then Department of Energy & Climate Change (DECC), retained certain UK level responsibilities, mainly those linked to transnational obligations. Northern Ireland has always had a special status, adding to the complexity.

3.1. Governmental Organisations

Defra, as the lead governmental department responsible for anything to do with biodiversity conservation, forestry, natural resources, and agriculture, emerged as an active proponent of the concept of ecosystem services for a number of reasons. So did several of its agencies. The Forestry Commission, Defra's statutory forestry agency, was found to be dealing with a wide range of ecosystem services. Another main governmental department then, DECC,² tended to be concerned with anything to do with Climate Change, including carbon sequestration and storage, and renewable energy, like woody biomass. Local authorities emerged as another stakeholder, owing to their responsibilities for green infrastructure, development projects, and health. The analysis suggested that the main reasons for these governmental organisations to adopt and promote the concept of ecosystem services were the need to respond to international obligations; the prevailing political climate which favours market approaches; and dominant economic decision-making processes. However, whereas Defra appeared very involved in the active promotion of ecosystem services thinking, DECC's involvement in the debate seemed to be rather pragmatic; so was the Forestry Commission's. Local authorities, on the other hand, still seemed to be grappling to understand this then relatively new concept. The

Table 1

Selected stakeholder groups in UK forestry with an interest in the concept of ecosystem services.

Commissioners/regulators	Producers/providers
• Governmental organisations	• Forest owning conservation NGO's • Private forest owners • Timber and forest industry

following section focuses on Defra, DECC, the Forestry Commission, and local authorities.

3.1.1. International Obligations

The analysis revealed that, in recent decades, decisions regarding the British countryside, including her forests, had increasingly been shaped by European community and other formal and informal international processes and commitments. In the UK, Defra was found to have the overall statutory responsibility for the implementation of international obligations linked to the environment and natural resources, including the Convention on Biological Diversity (CBD) and its ecosystem approach and ecosystem services concept, the NLBI, and the MCFPE. However, transnational obligations, such as those linked to biodiversity, climate change, and timber trade, need to be fitted into existing policy arrangements. Several interviewees stressed that in the UK forestry sector, the UK Forestry Standard was the overriding policy document, and promoted sustainable forest management. As one of the respondents explained:

"So, that hasn't gone away, other things have come in on top of that. So, ecosystem services come into that environment, you know, some of these services are thought about within forestry, they are part of sustainable forest management... there are other things as well, talk about the ecosystem approach... sustainable forestry... managing for biodiversity, but also... landscape."

Interestingly, both formal and informal transnational commitments were also found to be implemented either only rhetorically, or actually in practice, or to various degrees in between. Indeed, the interviews suggested that international obligations, including those linked to ecosystem services, were frequently implemented only rhetorically by altering the wording of prevailing policies, or by re-packaging existing concepts and rules, without endeavouring any real change. One interviewed forester, for instance, noted that:

"Certainly, British forestry has been more about sustainable forest management... and I think ecosystem services are, kind of, a bit of a bolt on to those sorts of things. Currently, in some places people have rather simplistically bolted it [ES] on, or altered their language to, kind of, try to accommodate an ecosystem services framework..."

In other cases, transnational commitments involving ecosystem services may actually be applied in practice. The analysis revealed that this took place especially around the mapping, valuation and marketization of ecosystem services. In fact, there tended to be more measured attempts to identify specific services for which values can be identified. One obvious example highlighted during the interviews and linked to international obligations was carbon sequestration. One of the respondents explained, that in the UK, at the time, DECC led on compiling and reporting net greenhouse gas emissions required under the Kyoto Protocol. DECC also claimed the international carbon credits from all forests in the UK. Within the ecosystem services framework, carbon sequestration had generally been classified as an ecosystem service.

3.1.2. Political (Market) Philosophy

Another issue influencing public policy, including forestry policy, appeared to be (party) political philosophical preferences. In the UK, similar to many other countries, the analysis indicated a general political tendency towards market approaches. The concept of ecosystem services and their monetary valuation, commodification and subsequent marketization seems to fit well into this type of thinking. The interviews

² DECC has since been dissolved and merged with the Department for Business, Innovation and Skills to become the new Department for Business, Energy and Industrial Strategy.

revealed that Defra, for instance, had, in recent years, produced a number of action plans, and supplementary guidelines to stimulate the valuation and marketization of ecosystem services. Commenting on this trend, one interviewee stated that ecosystem services were

“the next bandwagon. ... if you go back, pre-2012, before May 2010 in England with the general election, the Labour Administration was very interested in climate change. So, anything in forestry was badged up as climate change... Now, less so, now ecosystem services, as well as economic stuff are the flavour of the month. Climate change is still part of that, but people repackage it...”

Moreover, it emerged that in line with this economic philosophy, but also because of austerity, various recent UK governments appear to have sought to move activities from the public to the private sector or to find new ways of private financing in the delivery of public services. Accordingly, public financial support for forestry, namely grant aid, seemed to have become sparser, calling for new sources of public or private income. The interviews suggested that in practice, this economic agenda was reflected in the development, under the auspices of Defra, of voluntary carbon markets, and PES schemes, such as payments for watershed protection and biodiversity conservation management. One respondent, for example, explained that:

“... part of the current keenness within government on the ecosystem approach comes from a sort of marketization of the environment more generally. I think, because of the political, not just the fact that we are in a period of austerity, but I think there is a general political tendency towards the idea of generating markets for things. The idea of ecosystem services is appealing because it sort of holds out the possibility of generating a market and therefore allowing consumers of the benefit to pay to the providers of it. I think that must be the lure in part”.

A practical example mentioned during the interviews, and one which seemed particularly appealing to governmental organisation, were payment schemes for the provisioning of clean water. One respondent explained that, in many cases, it can be cheaper for water companies to improve water quality through changes in land management practices in their water catchment areas, compared with investments in expensive water treatment plants. However, the managers of that land need to be paid for this. The interviewee elaborated on this type of payment scheme, using the city of Manchester as an example:

“So, in effect there is an ecosystems service transfer going on because Manchester people are getting the benefit of clean water via paying United Utilities through their water bills, and some of that money is then going to the land owner, sorry the tenant farmer, to say ‘I am not benefiting from producing as much sheep as I used to’”.

Another example mentioned by interview respondents was voluntary carbon markets. The Forestry Commission, for instance, appeared to be particularly supporting the idea of voluntary carbon markets:

“There has been an attempt to develop and underpin the treatment of sequestration and storage as an ecosystem service through the UK Woodland Carbon Code. ... So, although it is not developing a market itself, it is providing a sort of standard and a scheme that gives some assurance around carbon being stored and sequestered. The idea is that that would then be something that voluntary markets could spin off from”.

The code intended to support the sequestration of carbon by means of planting new woodland. It was also found to have been promoted as a new income stream for landowners from private sources. So, has the promotion of fuel wood.

3.1.3. Dominant Decision-making Practices

The ecosystem services framework also holds the promise to take the environment more fully into account in traditional forms of decision-making, especially within the framework of cost-benefit-analysis (CBA). Accordingly, the analysis of the interviews revealed that, over the years, numerous attempts had been made, especially by the Forestry Commission and the Treasury, to place an economic value on forest benefits or services for which there were no markets. This allowed for non-marketed forest benefits, such as recreation and landscape amenity, but

increasingly also biodiversity, water quality and flood regulation to be taken into account more fully in CBA's. The analysis found that this information was also used in attempts to gain more support for unpopular forestry expansion schemes and government spending on those. One respondent elaborated on the situation then:

“Worldwide, I think, but particularly foresters in Britain needed to take this approach for the reforestation programme to have credibility and public acceptability...”

Thus, the principal idea of forests benefitting society through a range of benefits or services that can be valued economically and then included in CBA's seems to have been around for a great number of years. A similar, but more contemporary example, highlighted by one of the interviewed state foresters, was the frequent trade-off between timber production and recreation in national parks. Commenting on the value of different management options in the New Forest, a national park in southern England, he explained:

“The sort of value of the people who are going into the New Forest as a recreation area, the money that is physically going into this area, is many times more than the timber output and so we need to value that”.

Another well-established governmental decision-making mechanism across Europe on the more local level, and implicating local authorities, involves environmental impact assessments. However, at the time of the interviews, the inclusion of information on ecosystem services in this well-defined decision-making process, seemed to be only just beginning. In fact, interviewees were still struggling to understand the implications of ecosystem services thinking on the local planning and environmental management level. Nevertheless, it emerged that there had also been a range of other early activities around the use of ecosystem services and linked to land-use or management decision-making. These included the mapping of ecosystem services, trade-off analyses, risk analyses, biodiversity offsetting pilot schemes, and the increasing use of natural capital accounting. One interviewee, for example, maintained that the idea of ecosystem services

“also forces people a bit more about priorities, and that there are trade-offs. And if you start to set up the system which will be giving values to these different elements, then you have to think about the trade-offs between them”.

Moreover, the analysis also found that some of these practical activities, especially ecosystem services mapping, and PES, and biodiversity offsetting pilot schemes, tended to involve various governmental organisations, often in collaboration with a range of other stakeholders.

3.2. Non-governmental Conservation Organisations

Land owning conservation NGO's in the UK also emerged with a certain interest in the concept of ecosystem services. In particular, the protection of ecosystems through the valuation and incentivisation of its services was seen, by many, as useful mechanisms for supporting and advancing their activities. However, NGO's with an interest in the conservation side of woodlands were found to be a very diverse group and covering a wide range of objectives. The interviews revealed that, for example, the National Trust, as the largest forest owner after the Forestry Commission, runs its woods with a strong focus on public access. The Woodland Trust, the Wildlife Trusts, and the Royal Society for the Protection of Birds (RSPB), on the other hand, manage their woodlands primarily, but not exclusively, for biodiversity. Interestingly, several conservation NGO's appeared to be particularly interested in ecosystem services as a way of achieving their biodiversity objectives. These were inclined to use ecosystem services language to draw attention to the importance of biodiversity to gain more support for its conservation and to lobby for more funds for conservation management.

3.2.1. Awareness Raising and Support for Biodiversity Conservation

The analysis of the interviews suggested that conservation NGOs who had a strong concern for biodiversity conservation tend to be using the concept of ecosystem service as a tool to gain more support

for the conservation, enhancement, or restoration of biodiversity. They appeared to be deploying ecosystem services in tandem with biodiversity arguments to make a stronger case for biodiversity conservation. Conservation NGO's were also found to specifically target ecosystem services as a means of securing biodiversity, based on the assumption that one would automatically deliver the other. According to one respondent from the Wildlife Trust, for example:

"Our core interest is biodiversity, but it's not exclusive. We respect some of these other services, but also we see them as an important way to help deliver for biodiversity as well..."

Moreover, the Wildlife Trust(s) were also reported, by several interviewees, to be using ecosystem services language to draw attention to the benefits of their nature reserves, and the importance of the conservation work carried out by the Trust. In Lewes, for instance, the Wildlife Trust offered so called 'Nature's Gain' walks during which the public was aided to identify the various ecosystem services their local nature reserve provided. In other places, the analysis revealed, that they facilitated workshops with relevant stakeholders to identify and map the ecosystem services of local or regional areas of conservation importance.

In contrast, it emerged that in some cases conservation NGO's also used ecosystem services as an argument against some of the forestry intensification taking place in various parts of the country, or even wood fuel production. In the words of one forester:

"So, it is an argument, saying 'you should be managing this in more sensitive ways, more ecological ways because the value of the biodiversity benefits and conservation benefits certainly outweighs whatever you are getting for timber'..."

Similarly, they were also thought to deploy ecosystem services language against forestry plantations on former heathland or upland sites. The above forester further explained:

"There would be an argument that clearing the plantations and restoring it to open ground would lead to higher ES delivery in terms of biodiversity or improved (non-tree) landscape, and perhaps better water quality on some sites... So, there is an argument there".

At the same time, conservation NGO's would call on the government to pay for that biodiversity provisioning. In fact, several interviewees saw state support as being crucial for this kind of activity.

3.2.2. To Call for Funds for Conservation Work

The interviews suggested that many non-governmental organisations, including conservation groups, had, in recent years, increasingly become frustrated over their dependency on fluctuating or declining public funds and private and individual donor contributions. Hence, there appeared to be a strong interest amongst some conservation NGO's in new, and more stable sources of funding, both from public and private sources. Indeed, the analysis revealed they tended to have an expectation that, through the adoption of an ecosystem services framework, new resources will arise to help conserve and manage their preferred habitats or landscapes. A respondent from one of the conservation NGO's, for example, argued that

"There is a large established sector to do with nature conservation, where they are all using ecosystem services language... as a way of identifying funding".

Conservation organisations need funding for a number of activities. Those listed during the interviews included tree planting and restoration activities, but also for the building or maintenance, for example of public footpaths. One interviewee noted that conservation NGO's would be

"interested in the potential for generating economic activity that would drive positive woodland management for native forests".

Similarly, another respondent pointed out that, for example, the Woodland Trust, might be

"very interested in using the carbon side of payments for ecosystem services to create more native woodland".

Indeed, the analysis revealed that the Trust had been operating a voluntary carbon market for several years, creating additional income for the creation of native forests. New forms of income through PES, in particular, were seen as holding the promise of providing a more stable income stream for nature conservation, as compared with fluctuating donations, or 'erratic public' funds, as one interviewee put it. New payment schemes, especially for watershed protection measures, might introduce binding longer term agreements which reinforce the supply of services over many decades even. One interviewee, for instance, argued that:

"If it is settled as a proper PES scheme, where it is an annual payment or five-year payment, and it is actually set in place as a payment for that service then there is more guarantee that that kind of management will continue".

However, it also emerged that conservation organisations seem to differ in their opinions regarding the use of ecosystem services, their valuation and the development of new forms of payments and markets for ecosystem services. Indeed, whilst the idea of ecosystem services was seen by many as successful in drawing attention to biodiversity conservation, several respondents expressed scepticism, particularly towards the strong economic perspective of the concept. Interestingly, whereas the Wildlife Trust arose as a particularly strong advocate of ecosystem services amongst the forestry related conservation organisations, the National Trust and the Woodland Trust appeared less so. Although the reasons for these differences were not very clear, one possible explanation could have been that those conservation organisations that were financially relatively secure and therefore did not necessarily depend on additional income either from the government or other private sources may have been less inclined to use ecosystem services to support their activities. Another reason may have been that only conservation organisations with a strong focus on biodiversity were interested in the concept of ecosystem services.

3.3. Private Forest Owners

Another group of forestry related stakeholders who emerged as keen advocates of ecosystem services thinking in the UK, were private forest owners. However, forest owners in the UK were also found to be a very diverse group with widely differing objectives for owning forests and woods. Some private forest owners possess their woodland for business purposes, mainly traditional timber production or sporting; others' keep it for wood fuel, private enjoyment, landscape amenity, or conservation objectives. The analysis indicated that their main interest in ecosystem services was in their potential for additional revenue.

3.3.1. Funds for Public Service Delivery and Additional Revenue

The analysis found that private forest owners were adopting the language of ecosystem service as a means of lobbying for new sources of income from government and private sources. However, this lobbying seemed to have taken place primarily through their trade umbrella organisations, mainly the Country Land and Business Association (CLA). The interviews also highlighted that in the UK, traditionally, the main income streams for forest owners had been from timber production and grant aid. However, both tended to change frequently, causing uncertainty. Moreover, in most cases, neither the income from timber nor from grants had been sufficient to pay for general woodland management, let alone to create an income or to manage woods with wider public benefits in mind. One of the interviewed foresters explained the particular challenge in the forestry sector:

"Even with conifers which are growing quite fast, you need some 40–50 years, if you are looking to grow them to the size they are worth the money. So, foresters are having problems with this because things are changing all the time".

Another forester noted:

"... the only income stream, well..., there are two income streams, but the main income stream would have been the timber that woodland

could produce, and the other income stream would be grant aid; basically, payments towards the costs of doing something, grant aids. But neither of those was sufficient to actually improve the delivery of the ecosystem services that the woodland could deliver”.

As a result, many private forest owners, but especially those who represent commercial businesses, seemed to have a keen interest in the development of additional and more stable income. Indeed, they appeared to be using ecosystem services language to lobby for more funds from public and private sources. In the words of one interviewee:

“They want to make a profit out of their woodlands, and if delivering ecosystem services, in inverted commas, is going to be monetised then great... Brilliant, they are going to be paid for what they are doing anyway”.

Indeed, forest owners and their representative trade organisations saw the ecosystem services concept as a major opportunity for lobbying. As another interview respondent put it:

“We all know about [ecosystem services], it is certainly an opportunity. Forestry has probably the biggest opportunity ever since climate change because we are the only sector that can deliver. So, ecosystem services are an opportunity...”

Crucially, forests and woodlands were found to provide a particularly wide range of benefits to the public. Hence, forest owners frequently contend that because they are delivering so many public services they should be paid for that by the government. In the words of one respondent:

“Forestry is essentially the biggest deliverer of ecosystem services, and that is why we are always arguing ‘why are we not getting paid for it by the government?’”.

Certainly, the analysis suggested that, unless forest owners could be compensated for their works or they can internalise the benefits others' derive from the wider social and environmental benefits their woodlands provide, they are less likely to manage their woods with public benefit provision in mind. This is even more relevant when landowners forego income opportunities on their land as a result of providing wider public services or pledging long-term conservation (Amacher et al., 2014).

3.4. Timber and Forest Industry

The interviews revealed that the commercial forestry sector also seemed to want to deploy ecosystem services to support their activities. In the UK, the timber and forest industry was found to consist of a range of industries within forestry; namely the softwood, conifer, and non-native plantation industry and the softwood processing companies, especially pulp and saw mills. The Confederation of Forest Industries (ConFor) generally tends to represent these interest groups, but also the timber markets (e.g. fuel wood, saw logs, veneer), and private landowners. Crucially, the timber and forest industry emerged as being particularly interested in ecosystem services thinking as a means of justifying tree planting.

3.4.1. Justification for Tree Planting

The analysis found that ConFor's main focus had traditionally been on providing a smooth supply of softwood conifer for forest production plants. However, the organisation had been concerned for a long time of a serious fall in timber production. Hence, it seemed to be very keen on finding new arguments that support the creation of additional resources and finances to increase tree planting; they were found to be using ecosystem services language for this purpose. Commenting on this point, one of the interviewees argued:

“... So that is their main focus, timber growing, they won't say it, they dress it up as ecosystem services, but I would say, that is their main focus, timber growing. If it suits them, they will say it is great for climate change, if it suits them, they will also say it's great for ecosystem services, but actually they are interested in economic activity related to softwood conifers”.

He added that:

“Quite often in forestry, climate change mitigation is used as basically an excuse for planting more trees for softwood timber production. ... a few years ago people talked all about climate change, now they are talking about ecosystem services. These are the labels that are used for tree planting...”

Indeed, it emerged that the forest industry frequently takes up new government policies and cleverly uses them to make the case for tree planting. Another forester elaborated on this phenomenon:

“... You have new administrations come in, and... the policies get repacked to suit the new administration... and then the forest industry will pick it up and think, ok, well, if we now want to have more tree planting for softwood production, we call it ecosystem services.”

A few years ago, we said, oh, it is all about climate change. So, depending on what the next administrations' particular interest is, it is a way of arguing for money and resources, and say you must support the forest industry because it does these things you are interested in. It is all about promoting tree planting, it's just politics”.

The interviews also revealed that the forest industry, especially through ConFor, was also interested in the idea of ecosystem services because of its potential for mobilising additional payments for delivering non-timber public services for its landowning members, namely for carbon sequestration, recreation and clean water.

4. Discussion

The ecosystem services discourse is now firmly established as a dominant way to talk about nature and the benefits to humans that flow from its conservation and sensitive management. However, the concept has been described as a ‘highly political framework’ which is promoted and used in different ways and in different contexts by a wide range of stakeholders (Kull et al., 2015). In UK forestry, this latest in a series of approaches has much in common with traditional multi-functional forestry perspectives, most importantly the emphasis it places on identifying a value for forest's or nature's benefits (Raum, 2017). Yet, whereas in the past the main purpose for valuing non-marketed forest benefits was for the government to be able to better justify the land use and public expenditure for forest expansion, today's interest in the valuation of ecosystem goods and services is more complex. Moreover, ecosystem services tend to be used in a wider context. This ranges from decision-making purposes to biodiversity conservation and finance, and new business and investment opportunities. However, most studies, thus far, had either focused on identifying (e.g. Harrison et al., 2010), mapping (e.g. Delgado-Aguilar et al., 2017), and valuing the ecosystem services (e.g. Liv and Opdam, 2014) of particular ecosystems on a regional or local level, on identifying their supply and demand, or on groups or individuals interested in the actual ecosystem services of particular ecosystems (e.g. Garrido et al., 2017). Very few had looked at the promoters of the concept of ecosystem services and the reasons for their interest. Those who did, mainly captured the discourse and politics of the ecosystem services concept more generally (e.g. Fisher and Brown, 2014; Schröter et al., 2014). A few others investigated a number of key players in the contemporary ecosystem services debate, including ecologists and economists (e.g. Braat and De Groot, 2012; Chaudhary et al., 2015), specific research institutions (e.g. Kull et al., 2015), international organisations, (e.g. Kull et al., 2015; Sullivan, 2009), and businesses and investors (e.g. Sullivan, 2009). Still, investors, especially, would make an important subject for further research. So would environmental consultants.

This paper has added to this list through a more detailed empirical analysis of four stakeholder groups linked to the UK forestry sector. These actors have a number of have different, but partly overlapping reasons for accommodating or actively pursuing an ecosystem services perspective. Thus far, the literature has provided relatively little information about the motivations of governmental organisations to adopt ecosystem services approaches. Hence, this analysis offers a particularly

novel contribution to the debate. The results suggested that in the UK, several governmental organisations concerned with forests, had, albeit to varying degrees and for different reasons, a keen interest in the concept of ecosystem services. Interestingly, the first reason, their obligation under various transnational agreements to take ecosystem services into account in national policy, was found to be complex. The results suggested that the diffusion of transnational commitments onto the national level depends, amongst other things, on the institutional set-up in which a country is operating, and existing policy arrangements. Sarel (2000), for example, proposed that “particular political and administrative structures of a country or a sector” can play a major role in public policy-making, and explain the “rhythms of diffusion” of new ideas (p. 509). Notably, a particular difficulty for European countries, especially politically devolved ones, is that global norms and obligations are not necessarily directly transposed from, for example, UN level to national country level, but instead undergo further, often complex negotiations and re-interpretations to bring them to the level at which decisions are made (Raum and Potter, 2015). In the UK, the increasing influence of other policy areas on forestry, and now involving different government institutions on the various devolved country levels, is adding to this complexity. Moreover, the motivations and abilities of key domestic stakeholders within a country (Skogstad and Schmidt, 2011) and political cycles (Potter and Wolf, 2014) may also play a key role.

In contrast, the forest owning voluntary conservation sector had adopted the language of ecosystem services largely pragmatically as a way of achieving their biodiversity objectives. They tended to be using ecosystem services to draw attention to the importance of biodiversity and to gain more support for its conservation, including through additional funds from public and private sources. The uptake of ecosystem services thinking by some forest owning UK conservation organisations is perhaps unsurprising, given the interest in this concept by the academic conservation community and major international conservation organisations; the latter tend to have a considerable transnational influence (Fisher and Brown, 2014). Nevertheless, both the literature and the interviews suggested that some conservationists are concerned about the increasingly utilitarian focus in nature conservation as it has the potential to compromise intrinsic values of nature and stewardship motivations. Moreover, it raises the question of whether policies focusing on ecosystem services can be successful in supporting biodiversity (Fisher and Brown, 2014). Private forest owners also appeared to be interested in the concept's revenue generating potential. However, some owners seemed to deploy the idea of ecosystem services to make a case for compensation or additional support for their management efforts related to the delivery of public ecosystem services and biodiversity conservation; others see it as a new business opportunity and to pursue their personal financial benefits. Indeed, it appeared that various providers of non-marketed ecosystem services lobby, generally through their trade organisations, for additional financial rewards from public or private sources for their public goods management efforts. Private funds were seen as particularly important during periods of fiscal retention and austerity. The commercial forestry sector, primarily represented through ConFor, also seemed to want to deploy ecosystem services thinking to support their activities, especially as a means of justifying tree planting, namely softwood conifers. Conversely, both scholarly and interviewed forestry experts raised concerns over the potential negative impacts of a wider adoption of the concept of ecosystem services on sustainable forest management and stewardship. Indeed, the approach, if not fully embedded within the framework of sustainable forestry, could lead to a return of unsustainable forestry practices and to a focus on single services for which there is a market (e.g. Quine et al., 2013).

Moreover, and similar to Sullivan's (2009) and Fisher and Brown's (2014) observation on the international level, the results indicated that several of the stakeholders analysed in this study, had, at the time of the interviews, began to form loose alliances and/or project collaborations, especially around the development of new payment for

ecosystem services schemes. In fact, between 2011 and 2015, Defra funded three rounds of pilot projects exploring the potential for PES across England and Wales, and involving several of the here analysed stakeholder organisations working collaboratively (Defra, 2016). Several of these pilots were linked to forests. Moreover, many of these organisations had, in one way or another, been involved in the UK NEA (NEA, 2011). There is thus considerable scope to track such networks or alliances in future research. Moreover, it would be particularly useful to further examine which of the proponents, identified in the literature and examined in this study, have more influence in the ecosystem services debate. There have been a number of scholarly accounts of the recent shift in emphasis towards market approaches in environmental policy in general (e.g. Gomez-Baggethun and Ruiz-Perez, 2011; Norgaard, 2010) and in forestry policy in particular (e.g. Arts and Buizer, 2009; Humphreys, 2009). However, there is still a gap in understanding about the degree of influence of the various actors. Still, Gomez-Baggethun and Ruiz-Peres (2011), for instance, reported on the increasing importance being given to economic means to address global environmental problems, namely climate change and biodiversity loss. The authors also highlighted the influence of the US and the UK on the International Monetary Fund and the World Bank, and other developing nations, in the late 1980s and early 1990s, to adopt neoliberal programmes of privatisation, deregulation, and marketization. Subsequently, market-based approaches became ascendant in international environmental policy. Initially, however, this took place mostly in developing countries and concerned with the destruction of primary tropical forests (Gomez-Baggethun and Ruiz-Perez, 2011).

Although not necessarily inherent to the concept of ecosystem services, these neoliberal trends have corresponded with the advance of valuation tools and market-based mechanisms, and have, arguably, swayed the shift towards their increased inclusion in ecosystem services related activities (Muradian and Rival, 2012). Moreover, because of their potential to raise new finance, PES became, until very recently, the most favoured mechanism to operationalize the notion of ecosystem services in policy and practice (Fisher and Brown, 2014). In fact, Fisher and Brown (2014) observed that many people “draw a sometimes almost synonymous link between services and the possibility of establishing PES, around which there are high expectations for revenue” (p. 261). However, the effectiveness of these market-based income streams for forest owners, whether private or conservation NGO's, has not yet been proven. Moreover, even though non-marketed forest benefits have been attempted to be economically valued since at least the 1960s, there is still an animated debate on the usefulness and accuracy of placing a monetary value on non-marketed ecosystem services today (e.g. Van Riper and Kyle, 2014). Conversely, Schröter and van Oudenhoven (2016), argued that the concept of ecosystem services can take many directions; its use in an economic sense is only one of them. Since its early adoption as an ethical argument for nature conservation, it has also been developed, for instance, into an analytical tool to help understand complex human-ecological systems, and a tool to assess the state of ecosystems. Moreover, outcomes of ecosystem services valuations could also be used for the implementation of regulation, taxes or subsidies (Schröter and van Oudenhoven, 2016). The identification and mapping of ecosystem goods and services can be another very useful tool in spatial planning.

Nonetheless, and despite its apparent usefulness, the qualitative approach and method used in this survey, has well-documented limitations, especially a potential lack of objectivity, transferability and reliability (e.g. Denscombe, 2014; Lincoln and Guba, 1985). Here, the relatively small number of interviews may have created an unintentional bias. However, this was unavoidable because the study required that interviewees had a reasonably good understanding of both UK forestry and the concept of ecosystem services. At the time of data collection the ecosystem services concept was still relatively new in the UK; hence it was difficult to find suitable interviewees. Still, the interviews provided decisive information on stakeholder motivations and perspectives

towards ecosystem services in forestry during the early years of the concept's implementation in the UK. Moreover, it seems reasonable to assume that at the time of publication of this article, the stakeholder perceptions and motivations in UK forestry have not markedly changed. Also, whilst the results were derived from a particular country, and a specific sector within it, they may partly be replicable in other locations and contexts, as, at least some of the key advocacy groups investigated here, may have similar circumstances and motivations in other countries and sectors, at least within the developed world. Notably, although the rapidly evolving global ecosystem services debate has, to some extent, progressed since the interviews were conducted, the results of this analysis still provide an important baseline against which future investigations can be placed. For instance, in a few years' time, it would be most valuable to examine whether the expectations held by some of these stakeholders in the ecosystem services concept have materialised.

5. Conclusions

This paper explored the motivations of four prominent stakeholder groups in UK forestry for accommodating or actively pursuing ecosystem services thinking. These were governmental organisations, forest owning conservation NGO's, private forest owners, and the timber and forest industry. These stakeholders were interested in the concept of ecosystem services, chiefly, but not exclusively, because it is required under international obligations; it is in line with dominant market political philosophy; it holds the promise to better include the environment into traditional economic decision-making processes; it helps to draw more attention to (biodiversity) conservation; it holds the promise of new sources of income from both public and private sources; and it can be used as a convenient argument to promote further tree planting. Crucially, these stakeholder groups have different, but partly overlapping reasons for pursuing this new perspective. A better understanding of who is adopting and/or actively promoting ecosystem services thinking and why should be of particular benefit to academics, but also to policy-makers and conservation practitioners.

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