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Article

Do Ideas Change Policies? Some Reflections on Ecosystem Services in Environmental Decision-Making

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ABSTRACT

Ecosystems play crucial functions in our economic and social well-being, known as Ecosystem Services (ESs). The uptake of ESs in national public policies and decision-making is advancing slowly, and the application of the concept still lags behind in many national and subnational systems within the European Union (EU) and beyond. Delays are particularly long in the EU's Outermost Regions (ORs) and Overseas Countries and Territories (OCTs) as well as in the Overseas Territories (OTs) of the United Kingdom. This article presents the research conducted in some of these ORs, OCTs and OTs—internationally acknowledged as biodiversity hotspots—and frames it in the context of the relationship between ideational innovation and institutional change. In particular, it investigates whether, to what extent and how ideas can cause changes in the status quo of laws, regulations and administrative practices that are designed to protect nature. The article also explores the major obstacles faced by ideas in the attempt of causing political, administrative and policy change, and disrupting existing patterns of decision-making. Finally, it recommends possible lines of actions to circumvent these cognitive, organisational and political constraints.

KEYWORDS: ideas; institutional change; biodiversity policy; European Union; ecosystem services

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INTRODUCTION

Problems and subjects emerge as public issues that deserve governments' attention and action at a given time in a precise context according to the frames—i.e., sets of ideas—in which governments and non-state actors think and act. The ideas shared by policy actors also have a strong influence on the decisions they take [1]. The environmental policy domain has been populated by numerous ideas that have emerged at different moments in time across its evolution since the 1970s. Older ideas (e.g., sustainable development) have entered the policy discourse and have shaped the policy decisions and institutional arrangements with which we live today. Other concepts are still finding their way through international

debates and are not fully integrated into national legislative and regulatory frameworks, political strategies and administrative practices. An important concept that has emerged from the natural sciences is the idea that ecosystems play crucial functions in our economic and social well-being. These beneficial functions are referred to as "ecosystem services" (ESs) as internationally defined in the early 2000s in the context of the Millennium Ecosystem Assessment [2].

Examples of ESs are the provision of food, fresh water, clean air and materials (e.g., timber). Other important, though less obvious, ESs are the protection from natural disasters (e.g., through the moderation of floods), regulation of climate, purification of water, pollination of crops, decomposition of waste, and regulation of pests and diseases. Ecosystems also provide important cultural services (e.g., recreational use and physical health) [3,4]. Through ESs, the planet's natural assets (i.e., Earth's environmental resources) provide us with important inputs for our economies and societies that we use as our "natural capital" [5]. The degradation of natural ecosystems alters their provision of ESs with negative consequences for human well-being [3]. Therefore, the concept of ESs can have an important impact on policy-making for biodiversity conservation at all levels of governance.

However, the uptake of ESs in national public policies and decision-making is advancing slowly; it has remained predominantly in international (mainly scientific) debates rather than populating national practices. This happens in many European countries despite the effort of the European Union (EU) to promote the concept of ESs through its policies. The EU Biodiversity Strategy 2020 (aiming to protect biodiversity and halt the loss of species) included a call for all Member States (MSs) to map and assess ecosystems and their services [6]. More recently, the Green Deal [7] and the new Biodiversity Strategy 2030 [8] have confirmed the need to embed the concept of ESs into decision-making and policy practices. This political acknowledgement of ESs has brought the concept forward in the policy discourse, and has partially influenced policy developments in national systems where legislative revisions are timidly trying to bring national policy frameworks more in line with EU policy objectives with regard to ESs.

The EU is also contributing to the uptake of ESs in national and subnational public administrations and environmental decision-making through funding programmes (e.g., Horizon Europe) and the definition of strategic orientations for eligible project activities [9]. By engaging in these projects, public officials are becoming more familiar with the concept and its application, and are likely to help spread such knowledge within their organisations. However, the application of ESs still lags behind in many national and subnational systems within the EU and overseas Europe. This is particularly evident in the EU's Outermost Regions (ORs) and Overseas Countries and Territories (OCTs), and to some extent in the Overseas

Territories (OTs) of the United Kingdom (UK). ORs, OCTs and OTs constitute the geographical scope of this study.

A total number of 36 overseas entities belong or are historically linked to five Member States (MSs) of the European Union (EU)—Denmark, France, the Netherlands, Portugal and Spain—and the United Kingdom (UK). They are located in the Atlantic, Antarctic, Arctic, Caribbean, Indian Ocean and Pacific Ocean regions. Among these entities, 9 are ORs and 13 are OCTs of the EU. Another 14 OTs are linked to the UK (Supplementary File 1). These European overseas entities are home to very diverse and often unique ecosystems. They host more than 70% of Europe's biodiversity, which makes them important at the global scale as "biodiversity hotspots" [10].

This article presents the research conducted about the adoption of ESs in the decision-making of a selection of ORs, OCTs and OTs, and frames it in the context of the relationship between ideational innovation and institutional change. In particular, it investigates whether, to what extent and how ideas can cause changes in the status quo of laws, regulations and administrative practices that are designed to protect nature. Can ideas influence public policies and administrative practices? Why are widely debated ideas not implemented? The article also explores the major obstacles faced by ideas in the attempt of causing political, administrative and policy change, and disrupting existing patterns of decision-making. The article does not want to be interdisciplinary and takes, in fact, a political and policy research angle. For instance, it does not investigate the sociological dimension of post-colonialism that was, indeed, not included during data collection with experts and data analysis.

After this short introduction, the concept of ideas is explained and ESs are presented as one concrete example of policy ideas. Later, the article analyses the major hindrances in the adoption of ESs in the current institutional arrangements of overseas Europe.

IDEAS, INSTITUTIONS AND POLICY CHANGE

Ideas are "mental constructs" of several types. They include utopias, ideologies (or worldviews), discourses, beliefs systems and theoretical paradigms (or causal theories) [11–15]. All (causal) theories are ideas in the sense that they represent cognitive orderings of the material world, and all posit causal relations that guide people's decisions and preferences. In other words, theories are about what has caused the problem at stake and how it can be addressed. Only rarely is there a single truth that results in only choosing one among many interpretations. This opens up space for politics [16]. Changes in these causal stories can challenge the existing social and political order by stopping certain activities, empowering some actors to fix the problem and reshuffling power relationships among vested interests [17].

A sub-type of ideas is "policy ideas", i.e., concrete prescriptions about how we should think of a public problem ("problem definition") and what

policymakers should do ("policy solutions") [18]. Problem definition refers to the way a problem is framed. Through this process, social phenomena go from being taken for granted to become public problems that demand governments' attention. Which problem definition prevails is often a question of power, public opinion and how the problem is communicated. Problem definition will impact on how we think we can address it, that is policy solution [18]. It follows that it is difficult to provide a solution for a problem that is not perceived in the mind of decision-makers and the electorate they respond to. Policy ideas have multiple sources: they can be based on personal beliefs or scientific evidence (and theories). In the latter case, policy ideas are usually produced by epistemic communities in the form of science advice [19]. Epistemic communities are groups of individuals who are connected, at the international level, by a recognised expertise and share policy-relevant knowledge in a specific issue area [20].

Ideas and Public Policies

Ideas have received attention by political science and policy analysis since the 1990s because they have proven their role in social and political life. Ideas shape people's actions [18] and, more importantly for us, determine political behaviour [16]. Indeed, 'the ideas policy actors hold have a significant effect on the decision they make' [1]. It is through ideas that people conceive of public problems for which they demand action from governments; it is through ideas that policy-makers design possible solutions to those (perceived) problems and define policy content.

Ideas have also started to be understood (and used for their explanatory potential) as an important source of institutional and policy change. They have, thus, been adopted as an important agent of institutional change since they can reshape historical paths along which institutions, including public policies, have developed [14,19,21,22]. More precisely, ideas can be accountable for both change and continuity in institutional settings [11,23,24].

Indeed, policy issues appear on national political agendas as a result of the interactions between ideas, actors and institutions [1]. Sets of ideas, policy actors and political institutions interact and, at specific times, open critical junctures of opportunity (or "policy windows") that key players in the political process (i.e., the policy entrepreneurs) can use to push issues and policy solutions on those agendas [25]. Such windows of possible change open for a short time and are likely to occur in relation to critical moments (e.g., external shocks) or institutional events (e.g., elections and legal revisions) [1].

Ideas are constantly changing since they are permanently reconsidered and redefined by actors communicating, interacting and debating with each other [16]. An old idea is usually questioned once it becomes inadequate in a new context or is perceived as failing to solve a problem. Then, a political space opens for alternative ideas that seem to offer better solutions [11]. New ideas emerge, float, develop over time and can become

codified through a process of normalisation and institutional embedding. The process of collapse of old (discredited ideas) is thus followed by the emergence of new ones [24].

Constituted interests will try to defend the ideas embedded in the existing policy frameworks even when those (old) ideas are wearing down in the light of unfulfilled expectations generated by the policies they inspired [18]. Furthermore, institutionalised ideas can constrain the dissemination of new policy solutions because people simply want to ignore innovative ideas ("cognitive lock") [16]. The same ideas that support the status quo may be too powerful to be substituted with newer ideas in the absence of a crisis (external shock) or unless the status quo becomes highly discredited and unacceptable (internal policy failure) [24].

It follows that ideas can cause policy change under specific institutional and political conditions. First, for policy change to be possible, there needs to be a realistic alternative to existing ideas. Second, ideas are more likely to influence existing policy frameworks and administrative practices when powerful actors or coalitions of actors ("advocacy coalitions") decide to promote them, thus acting as policy entrepreneur [14,21,22,25,26]. This can explain why valuable policy ideas (i.e., plausible policy solutions) become actual policies while others do not.

International governmental bodies, epistemic communities and non-governmental organisations (NGOs) influence institutions at the domestic level through "ideational processes": they can alter actors' preferences (domestically) through the shaping and diffusion of new policy ideas [27]. Policy ideas often cross national borders and diffuse transnationally through the actions of academics, think-tanks, NGOs, politicians and international organisations such as the International Monetary Fund, the World Bank and the European Union (EU) [21].

Nevertheless, national institutions and policy legacies as well as country-level policy expertise and capacity remain central to the politics of policy change around the world. In other words, territorial institutions (and cultures) filter the influence of transnational trends, including the ideational innovations, on policy change at the country level [21].

Although it is agreed that ideas matter, it is important as social scientists to explain how they matter. An idea only matters when it shapes people's actions. In other words, we know that an idea is essential to a political development when we can identify it and trace its influence in that political outcome. Yet, ideas can have a long history. Therefore, we need to identify them and follow their development and influence over time [16]. If we want to understand how ideas fall, rise and become dominant (for a while), we need historical analysis to trace how ideas change over time and determine institutional shifts [11]. We need an attentive examination of the political (national and subnational) contexts and actors to understand the evolution of ideas [16].

New Ideas in Biodiversity Policy: The Case of Ecosystem Services

Ideas rise and fall in some policy areas more often than in others. Particularly, '[t]hose working in science, policy and practice related to the management of the natural environment regularly encounter new ideas and terminologies' [28]. We stated above that an important source of new ideas is represented by international organisations such as the UN agencies and the EU; they seem to work as "ideational entrepreneurs" [27] as the history of ESs shows. Ideas can have a long history and it is useful to trace their development over time [16].

The concept of natural capital started to develop in the 1970s as a result of growing ecological concerns about the use, degradation and loss of natural resources. The idea behind the emergence of this concept was that the services offered by nature could be more explicitly incorporated into economic decision-making if they were expressed in monetary terms. The term "Ecosystem Services" (ESs) was thus first used in 1981 [29]. Although the notion of sustainable development overtook this novel approach in the 1980s, ESs returned to scientific debates in the 1990s.

Two important milestones in the development and diffusion of the concept of ESs in the international policy debate and global political agenda are the global assessment of the natural capital and ESs of 1997 [30] and the report on the Millennium Ecosystem Assessment of 2005 [2]. The work of the group of experts behind this report of the United Nations made it possible to produce a first "official" classification of ESs that was later taken up and subsequently refined by The Economics of Environment and Biodiversity (TEEB). This global initiative, commissioned in 2007, has delivered study reports (e.g., [31]) that have been highly influential in integrating environmental economics into decision-making [32,33].

In 2010, the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) was established with the mission of bridging the gap between science and policy, as well as advising governments on how to halt further environmental degradation. The IPBES provides, indeed, a science-policy interface where scientific information is analysed and synthesised to inform decision-making and influence global conventions.

ESs were then integrated into international environmental conventions such as the Convention on Biological Diversity's (CBD) Strategic Plan (2011–2020) with the adoption of the Aichi targets. Some of these targets are crucial for ESs; the Strategic Goal A (Targets 1 and 2) and Strategic Goal D (Targets 14, 15 and 16) constitute two important examples. Efforts to achieve these targets went under the so-called "Mapping and Assessment of Ecosystems and their Services" (MAES) in Europe. This development contributed to building more awareness about the numerous benefits of nature, particularly among decision-makers.

Later, the European Environment Agency (EEA) revised the first available classification of ESs (see above) with the Common International

Classification of Ecosystem Services (CICES); CICES was first released in 2013 and thoroughly revised in 2018 [34].

Despite a growing amount of scientific literature dedicated to ESs and their integration into numerous international policy documents (e.g., Agenda 2030) and EU strategies (e.g., EU Biodiversity Strategy for 2030), much remains to be done to further embed the concept of ESs in everyday policy and practice.

MATERIALS AND METHODS

Data collection has largely relied on interviews with independent experts as our primary source. Experts from several European overseas entities were identified and selected based on their knowledge and experience with MAES. We interviewed participants from relevant governmental departments or public agencies competent in spatial planning and environmental protection. Eight semi-structured interviews were conducted between September 2020 and January 2021 in several ORs and OCTs of the EU; field research also targeted one Overseas Territory (OT) of the United Kingdom (UK). The interviews allowed us to cover three ORs (Reunion, Azores and Canary Islands), two OCTs (New Caledonia and Sint Maarten) and one OT (Falkland Islands) from almost all European countries with overseas entities: France (Reunion and New Caledonia); the Netherlands (Sint Maarten); Portugal (Azores); Spain (Canary Islands); and the UK (Falkland Islands). The only EU MS with overseas linkages that was left out of our investigation is Denmark since the country fell out of the geographical scope of our research project (https://moveproject.eu). The MOVE Project aimed at facilitating the MAES approach to support regional policy in Overseas Europe. It was funded by the European Commission and lasted from April 2018 until September 2021.

We based the identification of potential participants for the research interviews on “purposive sampling” since the goal was to select interviewees who had a minimum level of understanding of the topic of our investigation (on this point see [35]). Purposive sampling is one of the possible forms of non-random sampling explained by Lynch (2013). The core of purposive sampling is that it ‘involves selecting elements of a population according to specific characteristics deemed relevant to the analysis’ [36]. For our analysis, two characteristics were relevant: geographical coverage of ORs, OCTs and OTs, and organisational affiliation with competent departments in national or subnational public administrations. Indeed, the interviews were mainly conducted at regional environmental agencies (in the case of ORs) or the competent division in the territorial governments (for OCTs and OTs).

Due to the COVID-19 pandemic, all interviews were conducted online and video-recorded with the consent of the interviewees. Each interview lasted about one hour. It was ensured that there were at least two interviewers for each interview—in some cases three interviewers were present. This was done to ensure objectivity in data analysis. The

information emerging from the interviews was noted by each interviewer separately. Later, individual notes were compared and discussed among the interviewers. Video recording was watched at least once after such discussion. The automatic transcription provided by the online platform used for the interviews (e.g., Webex or Zoom) was also used.

Content analysis was conducted on both the interviewers' notes and the interview transcripts [37]. The answers to the interview protocol used for the semi-structured interviews were encoded so that information could be extracted, summarised and structured along arguments. Data obtained during the interviews were treated in a way that makes it difficult to trace the exact source; this was done on purpose, to respect the commitment to the principle of anonymity and confidentiality. The content of the interview is referred to by the use of a letter for each interview file. The information given by respondents was checked and validated by a group of scholars involved in the MOVE Project. This collective internal review has helped increase the reliability of our research findings on the different overseas areas investigated in our study (Figure 1).

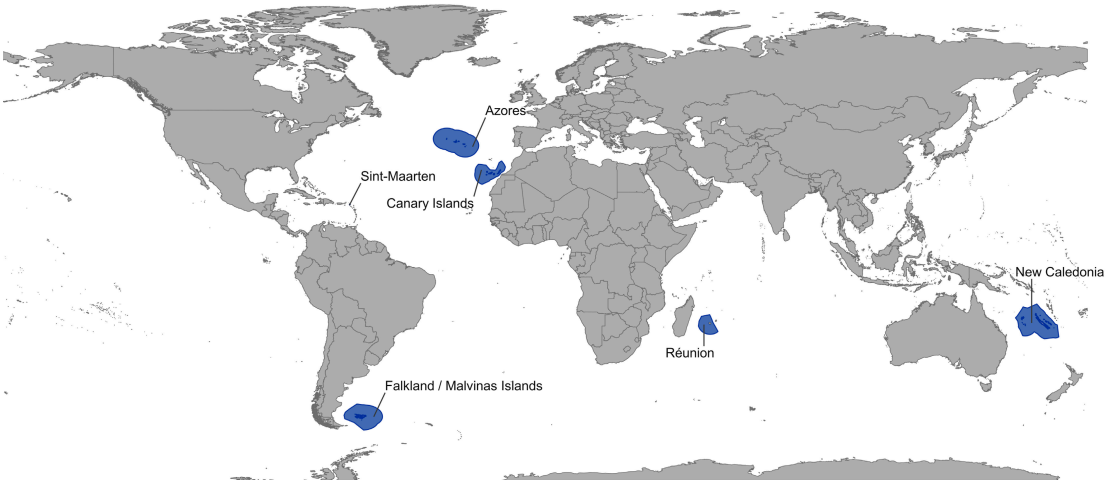

Figure 1. Overseas areas of investigation.

THE UPTAKE OF ECOSYSTEM SERVICES IN BIODIVERSITY POLICY: STATUS AND CONSTRAINTS

The idea of ESs are not often included in the policy framework of the overseas entities where we conducted our research. In many cases, laws and policy documents at national level (in the case of OCTs) or regional level (in the case of ORs) are outdated and predate the concept of ESs (Interviews D, E and G). The absence of ESs from national or sub-national documents is sometimes compensated by the acknowledgement of the concept in policy debates (Interviews E and G) or its uptake in administrative practices (e.g., in the Environmental Impact Assessment of specific projects) (Interviews D and E). In some ORs, ESs are not yet integrated in the policy framework of the region (Interview A), although they are referred to by national environmental legislation (e.g., in France—Loi n 2016-1087 pour la reconquête de la biodiversité, de la

nature et des paysages) or national strategies for biodiversity (e.g., in Spain—Plan estratégico del patrimonio natural y de la biodiversidad 2011–2017). This section analyses the major obstacles to the adoption and use of new ideas (as policy solutions) such as ESs in environmental decision-making. We have identified three sets of constraints that emerged from the interviews conducted during field research; they have a cognitive, organisational and political nature.

New Ideas and Cognitive Constraints

A first obstacle in the uptake and use of the idea of ESs in public policies and programmes for biodiversity conservation resides in the same complexity of the concept: ESs are not easily understood by those civil servants that are expected to apply the concept, and even less by policy-makers responsible for adopting legislative and regulatory measures (Interviews A and H). In particular, the remote geographical location of ORs and OCTs seems to cause a delay in any policy development, including innovation related to policy ideas. Overseas entities are distant from the central nodes of both politics and research that are usually located on mainland Europe (Interview H). In these remote contexts, ESs can be perceived as a "new way of doing things" requiring highly technical skills that are not often available locally (Interview A).

The EU has promoted the diffusion of ESs in many public agencies through their involvement in European projects (Interview D). A clear awareness about ESs is nonetheless still weak in many of the public agencies where interviews were conducted. The same mindset of the civil servants employed in these agencies may be too conservative to adapt to new ideas and innovative approaches for the solution of environmental issues. ESs can thus be considered as an "alien concept" remote from decision-makers' priorities and people's daily life (Interview B) and only applicable in richer geographical contexts (Interview G).

Furthermore, the concept implies a paradigmatic shift that needs to be accepted first of all by the technical and scientific personnel working in public administrations—as well as the scientists advising public decision-makers—before it can reach practitioners, policy-makers and society as a whole (Interview A).

The science-policy interface through which new scientific ideas like ESs can be channelled varies greatly across the overseas entities investigated. In some of these entities, the science production can be completely disconnected from the decision-making process. On the one hand, policy-makers tend to take public decisions rapidly and based on weak evidence. On the other hand, scientists often ignore what decisions are taken, when and how (Interview B). In other overseas entities, scientists advise policy-making informally, while formal science advice mechanisms are absent. This informal science-policy connection is channelled through ad-hoc studies conducted by research centres and universities (Interviews D and F) or NGOs (Interview G). Finally, in more institutionalised contexts,

environmental decisions are assessed by advisory committees with very different compositions: they can include various combinations of politicians, industry representatives, NGOs and experts. When EU overseas entities are part of a Member State (MS), as in the case of ORs, institutionalised science advice mechanisms (at least for the environment) always exist at the national level even when they are weaker (or less institutionalised) in the region (Interviews D and H).

In those contexts where the science-policy interaction is based on informal arrangements, such precarious relations can be further weakened by political instability. At each electoral round, changes of functions and positions follow the formation of new political majorities. Then, the whole process of information delivered to decision-makers has to start again from scratch to try to build new support to science advice from the new political elite in key positions (Interview G). In contrast, in those contexts where science advice is institutionalised, processes of informed decision-making are more stable and decisions are taken based on sound evidence (Interview E).

The novelty of the concept of ESs can also explain its low popularity among the general public. In fact, public awareness of environmental issues varies across the cases we studied. In some territories, the general concern for environmental protection is not accompanied by a clear awareness of the services that ecosystems bring to humankind (Interview A). In other cases, the public is wary of environmental matters and might have been reached by information about ESs via newspaper articles and "bits on the radio". In some other cases, specific public groups (e.g., the farming community and the fishing industry) may recognise the substance of what ESs mean but are not familiar with the term itself (Interview E). In particular, one interviewee stressed that the meaning of ESs is rooted in the traditional knowledge of some indigenous communities—Indigenous and Local Knowledge (ILK)—but under other labels than ESs (Interview F). Without entering the debate whether the concept of ESs sufficiently include ILK (see [38] for this), the data suggest an alignment between this scientific term and existing ILK perspective on nature and people.

New Ideas and Organisational Constraints

The conceptual innovation that is embedded in ESs makes it difficult for this idea to penetrate administrative practices because of important limitations present in the public administrations we interviewed, namely limited expertise and small personnel teams.

More knowledge and internal expertise about this new approach is needed in the public agencies managing environmental matters (Interview C). In some cases, we did not find any awareness, familiarity or understanding of ESs in environmental administrations (Interviews A, B, C and H). When present, the knowledge of ESs seems to be confined to a small number of people within the public agencies we contacted. In most

cases, such knowledge remains nonetheless at an abstract level and is not applied on the ground or used in daily work (Interview G).

In addition, adequate tools for mapping and assessing ESs are already available in the competent public agencies (e.g., high-resolution satellite imagery, good geographical information infrastructures, spatial data and maps of habitats). What is lacking is an adequate amount of human resources that could sustain the application of the MAES approach (Interviews C and E). What emerges from field research is undersized personnel teams that are, thus, unable to cover all environmental matters: biodiversity, land management, pollution, energy, climate change, etc. (Interview E). Weak staffing often obliges public agencies to rely on external consultancies, which deprives the organisation of the opportunity to apply MAES and build capacity (Interview G).

The reasons for both insufficient expertise and inadequate staffing need to be found in the specific characteristics of European overseas entities: geographical isolation (due to their remoteness and insularity in most cases) and relatively small scale (in terms of size, population and economies). First, the remoteness of these areas does not easily attract people; hence, pools of human resources are quite limited. The same highly-skilled experts who are trained in these distant European lands usually search and find better professional opportunities on mainland Europe (Interview E). Second, the small dimensions of these areas often constrains economic development thus determining small economies. The direct consequence is that financial resources are limited to establish and maintain a large administrative system (Interviews D and G).

Finally, the quality of human resources is also impacted by the regular turnover of personnel that is common to most overseas entities and deprives public agencies of expertise (Interviews A and G). Civil servants move across agencies with very different mandates within the same OR, OCT or OT as well as from local to national agencies in some ORs. Such loss of knowledge hinders any uptake of (complex) innovative ideas like ESs (Interview A). High turnover makes it difficult to build and maintain capacity since “people come and go” (Interview G).

New Ideas and Political Constraints

The paradigmatic shift represented by the uptake and use of ESs as a new idea for policy solutions has important socio-political implications that might slow down the integration of the concept in public decision-making.

Across the territories investigated in this study, public policies have been developed and executed in specific contexts populated by an array of existing interests (e.g., agriculture, forest production and mining industry). The formulation and implementation of policies has often happened in the absence of any information and quantification of the services provided by ecosystems. It follows that public policies would have a very different design if they had to be reformulated in the light of new

knowledge on ESs. In other words, the adoption of the MAES approach to decision-making would lead to radical reform of the existing policies. This may introduce disturbances in the existing equilibria among diverging interests and even disruptions in the current socio-political status quo (Interview D and E). For instance, a better understanding and application of the value of nature (through ESs) would imply important changes in the existing licensing system for many economic activities (e.g., building permits) (Interview G).

Path dependency represents an important explanatory variable for the inertia that seem to characterise many societal and institutional processes [39]. Policies are generally quite stable (and path dependent) since they are the result of mechanisms of reproduction sustained by existing political institutions and policy subsystems [40].

The policy change induced by the adoption of ESs in public decisions is very likely to clash with vested interests willing to keep current favourable policy arrangements. In this context, the pursuit of a policy objective like biodiversity conservation can become politically sensitive for many elected officials. Often neither the policy-makers are willing to drive radical, nor the local population is keen to accept new constraining policies even in the light of potential delayed benefits [39]. The issue of conservation (and ESs) might even be perceived in the eye of the electorate as a form of appropriation of the territory by a small group of scientists (Interview B).

This has emerged clearly in one context with regard to the role played by international NGOs (INGOs). In general, the INGOs working in defence of the environment (e.g., IUCN and WWF) are a good channel of science advice due to their presence in the field (through territorial branches), on one side, and their connection with international epistemic communities, on the other side [20]. However, in one of the territories where we conducted our interviews, elements of a general local distrust for INGOs were evident. INGOs can, indeed, be perceived as external actors, unaware of the local complexity. This was motivated during interviews on the basis of a strong sense of ownership of the local population for their territory. Here, local decision-makers and local associations are very wary in defending their full control on environmental policy and the territorial policy priorities (Interview B).

The inclusion of ESs in public decision-making ‘is always a political decision at the end’ and this political decision could disturb existing interests in the territory (Interview C). This aspect has to be taken into account when reflecting upon the uptake of ESs in public policies.

However, ORs, OCTs and OTs may also have a strong societal culture of defence of the environment. In some contexts, overt opposition to projects impacting on land use is quite frequent (Interview A). In addition, political attention and awareness about ESs are growing in several contexts; here, the political will to have biodiversity as a policy priority is increasing. The same is true for the business sector. In some areas, industry (e.g., tourism

and fisheries) is very open to the concept of ESs and in favour of their use in decision-making (Interview E). These economic interests could play a role in promoting the uptake of ESs in public decisions. For instance, some ORs and OCTs rely on a form of tourism that is often eco-tourism; hence, it is in their best interest to preserve the natural beauty of the touristic destination of the island (Interview C).

CONCLUSIONS

Messages of environmental preservation from the scientific world date back to several decades ago. However, changes in legislative and regulatory frameworks, administrative organisations and practices, and political culture take time. The institutional frameworks in which decision-makers and public agencies operate are often outdated, precede the development of new ideas and are, thus, not aligned with recent scientific developments (Interview E). The concept of ESs is not new in the scientific discourse. However, in terms of its diffusion into policy design and decision-making practice, the idea is in its infancy. Indeed, the concept of ESs still needs to travel from the scientific community and theoretical dimensions to its actual application in public decisions and policy initiatives in many national and subnational systems across the EU, Europe and beyond.

Particularly, remote areas and overseas entities like the ORs/OCTs of the EU and the OTs of the UK face several obstacles in the policy use of ESs. They all witness some degree of institutional inertia to uptake innovation in the form of new concepts and non-traditional approaches. Many of the entities that we have investigated have shown a clear gap in the incorporation of ESs in their legislative frameworks. One explanation of this gap is timing: old legislative frameworks simply predate ideational changes like in the case of ESs. However, even recent policy documents on biodiversity seem to neglect the concept of ESs (Interview D).

This article has highlighted some major difficulties linked to the cognitive, organisational and political complexity that accompanies the concept. Although ESs have not yet become common practice in most of the geographical areas investigated, space for improvements exists and needs to be the focus of a politico-administrative strategy of intervention at multiple levels of governance.

For instance, in the case of temporal asynchrony between the emergence of new ideas and the existing institutional framework, the process of amendment of existing laws opens a policy window for the uptake of new policy solutions (Interviews A, E and G). The need for domestic laws that clearly call for the use and conservation of ESs was recurrent in many interviews. Only authority-based instruments such as (new) laws and related coercive measures of execution and enforcement can oblige private as well as public actors to keep ESs into account (Interview C and D). In other words, only the inclusion of ESs in national and regional legislative frameworks can institutionalise their use in

decision-making (Interview E). The EU can function as a driver of change in the sense that it can contribute to open such window by prescribing the adoption of new approaches (e.g., ESs) by its MSs (Interview H). However, EU obligations only apply to ORs, not to OCTs [10]. Here as well as in the OTs, the national political leadership and the top management in public administration have full responsibility for the course of action they decide to navigate between the Scylla of innovative ideas and the Charybdis of established interests.

With no ambition of being exhaustive, at least three other lines of action can improve the uptake of ESs in environmental decision-making by overcoming the cognitive, organisational and political constraints analysed in this article: developing a strategy of science communication; building capacity at the local level; and raising awareness among the general public.

First, both the term and concept of ESs have several limitations in terms of their ability to communicate clearly across disciplines and among diverse stakeholders [38]. This links to a broader issue in the science-policy interface, or rather science-policy disconnect. As a general trend, the relevance of environment has climbed up in the political agenda in the last couple of decades; governmental priorities have changed in favour of more attention to biodiversity [41]. In particular, in the last few years, policy-makers have been made even more aware of environmental problems by current planetary threats such as climate change. However, scientists need to take more action to better inform and educate decision-makers with the aim of further increasing their awareness about environmental problems. In order to achieve this, communication between scientists and policy-makers requires some simplification. Innovative communication tools such as visualisations and story maps—as well as videos and documentaries—can support simplification efforts.

Second, organisational constraints can be addressed by increasing the local capacity of the agencies responsible for environmental matters. Capacity could be strengthened through systemic training, standardised procedures and reliance on a “champion”. Training on ESs should be made available for those working in environmental public agencies and governmental departments. In parallel, education programmes could be developed for high schools and universities. In addition, the development and adoption of guidelines formalising a specific workflow around MAES within competent public agencies could enable a systematic uptake of ESs in the activities of (national and regional) public agencies even when ESs are not acknowledged in the legislative framework. Furthermore, in the absence of a person (e.g., an expert from a lower level of the organisational hierarchy) promoting the novelty of ESs, traditional administrative contexts might be reluctant to change. Instead, a champion could help turn the ES approach from a sporadic use to common practice within public agencies. As argued by Peters [26], ideas do not operate on their own, but

require some agency to be brought into action, some policy entrepreneurship.

Third, scientific information on ESs should not only be disseminated to public officials and decision-makers, since this risks to keep the term and concept within a circle of experts. Scientists should more often communicate and engage with the general public. This will allow citizens to familiarise with new environmental management concepts such as ESs and, eventually, build social support for this innovative approach to decision-making. The informed public could also represent an important channel for the uptake of ESs in public policies by exerting pressure on politicians and elected officials via political support. This societal leverage is crucial for change to current policy settings (see [39]). Communication and awareness-building can happen through events and workshops; scientific publications could also be accompanied by press releases via national and local media. Such commitment to shortening the distance between society and science goes hand in hand with the call for more public engagement that increasingly populates legislative texts and, even more, programmatic and political statements.

SUPPLEMENTARY MATERIAL

Supplementary File 1: Europe's overseas entities.

AUTHOR CONTRIBUTIONS

Conceptualization, GF; methodology, GF and ET; validation, GF and ET; formal analysis, GF; investigation, GF and ET; resources, PF; data curation, GF and PF; writing—original draft preparation, GF and ET; writing—review and editing, GF and PF; visualization, GF, PF and ET; supervision, PF; project administration, ET and PF; funding acquisition, PF. All authors have read and agreed to the published version of the manuscript.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

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