EKLIPSE

Knowledge & Learning Mechanism
on Biodiversity & Ecosystem Services

The diverse values of nature and integrating them into decision-making

A report of the EKLIPSE project

Horizon 2020
European Union Funding
For Research & Innovation
Grant agreement 690474

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This report should be cited as:

Citation: Varumo, L., Paloniemi, R., Kelemen, E. (2018). *The diverse values of nature and integrating them into decision-making – A report from the EKLIPSE project.*

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The diverse values of nature and integrating them into decision-making

Authors: Varumo, L., Paloniemi, R., Kelemen, E.

1. The request

1.1 Organisers

EKLIPSE is an H2020 funded project that aims to develop an innovative and self-sustaining EU support mechanism for evidence-based and evidence-informed policy on biodiversity and ecosystem services. A major function of EKLIPSE is answering knowledge requests from policy, civil society and science. These requests then lead to an in-depth knowledge synthesis, a foresight activity (identification of research gaps and emerging issues), or a societal engagement activity – depending in the nature of the topic of the request.

ClientEarth is a non-profit environmental law organisation, founded in 2008, which is committed to securing a healthy planet by using environmental law to protect oceans, forests, and other habitats as well as all people.

All of the following material, text, opinions and information related to the request of nature's values in this report are from the request and the requester and the science café events and discussions of the request on the KNOCK forum unless otherwise indicated.

1.2 Premises of the values request

There is a knowledge gap in how diverse values of various actors and sectors can influence policy, especially policy that is concerned with biodiversity issues (Barton et al., 2017). The way in which people talk and experience nature is seemingly not reflected well in the way biodiversity policy is funded or prioritized (Pascual et al. 2017). Thus, intrinsic, economic, social, cultural, relational and eudemonic values that nature holds need to be translated into biodiversity policy more efficiently to halt biodiversity loss and improve the wellbeing of our natural world, including humans.

Two main factors limit why policy does not reflect diverse values:

1) A strong emphasis on economic values in policy-making was the first concern expressed in the request and further elaborated while scoping the request with the requester. Emphasizing only economic values in policy was perceived as insufficiently capturing what the general public holds as important in nature and also as a poor argument for positively influencing policy. This limitation was further broken down into two aspects:

The first aspect relates to the "ecosystem services" (ES) concept and how, even though useful, it may lead to oversimplifications of richer and broader concepts such as biodiversity and nature (Gómez-Baggethun et al. 2010). It was pointed out by the requester that the complex relationship between biodiversity and ecosystem services should not be collapsed into a simple conceptualization, nor can analysis of ecosystem services substitute analysis of biodiversity. Therefore, it cannot be expected that public policy geared solely around ecosystem services will be able to capture all of nature's values. Additionally the concept was seen as risky since certain ES tend to receive more focus or be prioritized in policies thus discarding the holistic

approach of all ES as important and interlinked. For example, provisioning services such as wood were seen to be favored over cultural services; a path of thinking that could result in non-diverse ecosystems. Lastly, the requester also questioned the anthropocentric rationale of the ES concept, thinking what nature can do for humans, was seen as a one-dimensional perspective that reflected neither current policies nor research agendas. Intrinsic and other values need to be integrated into biodiversity policy design in order to ensure plurality instead of dominance of economic values.

The second aspect relates to economic valuation techniques and assumptions that nature's values are commensurable and thus can be compared under the metric of currency. It was criticized by the requester thet monetization works within a framework that is geared towards trade-offs, offsets and cost-benefit analyses and risks leaving out other information and valuation perspectives.

2) Capturing diverse values does not in itself change policy, was the second main notion expressed in the request. It was argued that the existence of knowledge about the diversity of values is important but its real value lies in improving and informing biodiversity policy, but giving a valuation or price to nature is barely a means not an end and thus does not bring about change. Pathways and responses to achieve desired actions and results need to be identified for policy-makers. Also, understanding how valuations and different paths of argumentation arising from them are able to impact policy can help develop the interactions between science and policy for better informed decision-making.

It was noted in the request that the existence of knowledge does not automatically translate into action for better biodiversity policy. In addition, it was argued that, it is crucial that the knowledge guiding our values and that we aim to feed into discussions and policy has a clear evidence base and is thoroughly researched to ensure credibility and a stable grounding for the policies developed and that we acknowledge that science may over-represent certain values and pathways of thinking and should thus not be the sole source of information.

More information: Watch ClientEarth's short video about the topic: https://www.clientearth.org/uk-25-year-environment-plan-natures-value/

1.3 The EKLIPSE mechanism for an integrated approach

EKLIPSE was approached by ClientEarth, through the first open call for requests in 2016, to create a meaningful dialogue between science, policy and society on the diversity of values by synthesizing knowledge on "how can nature's diverse values be incorporated into and reflected by public policy?"1 One objective of the EKLIPSE project is to bring together different communities of biodiversity knowledge holders and users in the European Union. Seeking ways to ensure that European biodiversity policy engages with a broad and diverse set of values was at the heart of this request:

"Nature's cultural, relational, intrinsic and eudemonic value all play a key role in driving people to action, and so public policy must interface with this, and build policy that speaks to these values and allows people to enact them. Biodiversity (and ecosystem service) policy will be lacking while it does not interface wholly with these values."

The request topic was seen to have European and even global relevance. Acknowledging the diverse values of nature, and bringing this into practice, has recently gained policy attention both at the global and the European level. At the global level, one of the first background documents of IPBES was the preliminary guidelines for values and valuation (Deliverable 3(d)) which outlined a diverse conceptualization for values

and valuation (Pascual et al. 2017). At the European level, FP7 research projects running in the las couple of years, such as BESAFE, OPERAs and OpenNESS, aimed to better understand the representation of diverse values in policy and decision making in more general.

As part of the EKLIPSE request process specific knowledge and evidence were explored and scoped with the EKLIPSE team and the requester to find the appropriate framings and methods to answer them. After a period of scoping with the requester, EKLIPSE proposed that a societal engagement approach would be most appropriate in this case. This type of approach could encourage public dialogue on the topic to identify which types of actors, dialogue and possible tensions, disagreement, agreement and arguments existed around the integration of diverse values in Europe. To increase the policy relevance of the 'Values' science cafés we had discussions with the expert team of the Hungarian National Ecosystem Services Mapping and Assessment project, as well as the IPBES Capacity Building Task Force during the summer of 2017. We used the comments and ideas received as building blocks to design a series of three science cafés, including the key topics for discussion and the list of invited speakers.

This approach could also contribute to achieving EKLIPSE objectives regarding encouraging societal debate on and engagement with policy and research relevant to biodiversity and ecosystem services. For 2017, a major objective for EKLIPSE was to determine whether an online science café could work technically and whether it would be a good method for encouraging participation in dialogue by various types of actors.

Regarding the diverse values of nature the following was requested:

- Synthesis and analysis of methodologies for capturing and communicating all of nature's diverse values, including intrinsic, relational and eudemonic values.
    - This includes, but should not be limited to, integrated valuation and multi criteria analysis approaches that go beyond ES as currently defined.
- Synthesis and analysis of how nature's diverse values can feed into the creation of better informed and better functioning policy formation and implementation.

This includes, but is not limited to, scenario analysis, dialogical and participatory policy-creation processes and examples of how model policies that reflect nature's value can (or do) function.

These needs were articulated as relevant for on-going policy processes. Tools and frameworks in an understandable language for both decision makers and the general public for enabling their participation in the development of policies was seen as central to ensuring positive integration of diverse values. Communication of values was interpreted as a need to clarify the terminology we use to discuss biodiversity, ES and nature's values on the one hand but also analyzing the pathways of argumentation used and the different media of communication and its impacts on framing values and influencing policy on the other. For better understandings of policy design processes and policy implementation analyzing the methods and opportunities where plural values could be or are incorporated into decision-making was considered meaningful. The underlying idea was also that more flexible approaches in policy design were to be sought to ensure that policies can be reflexive and reactive to the dynamic requirements of the natural world.

Increasing and addressing public awareness of biodiversity matters through different approaches is important in the EKLIPSE project. After discussing and scoping the request with the requester it was decided that **science cafés** would be a useful tool to answer the values request since it would bring diverse knowledge holders together at the science-policy-society interface. The request was noted as ultimately

useful to society and nature as a whole through the possible formation and design of better biodiversity policies and decision-making also in interlinked sectors such as health.

2. Methods

2.1 Societal engagement as a strategy for the request

Increasing and addressing public awareness of biodiversity matters through different approaches is important in the EKLIPSE project. The aim of societal engagement activities is to mobilize citizens and participants from different sectors of society to debate and discuss topical issues that often divide opinions, but that also have a need for discovering common ground in Europe. After discussing and scoping the topic with the requester it was decided that science cafes as a societal engagement strategy would be a good tool to answer the values request since it would facilitate integration of diverse knowledge holders and bring people together to the science-policy-society interface.

Since nature's values by definition heavily relate to beliefs and value systems rather than relying on purely scientific knowledge to decide what should be prioritized or highlighted in policy, it was considered important to use societal engagement to bring out the plurality of perspectives on the issue. We aimed to do this by inviting expert panelists who represented different aspects of the topic and by opening the conversation to the wider public and society, making it possible for anyone to voice their thoughts on the values of nature. The dialogue of information and opinion sharing was seen as a fruitful starting point towards finding ways to integrate and harmonize social, ecological, intrinsic and economic values. The dialogue would not provide a general conclusion or "right" answers to the request, but would rather give ideas on how to deepen the research on the topic and perhaps see where gaps and further knowledge needs for scientific approaches exist from society's perspective. The request was noted as ultimately useful to society and nature as a whole through the possible formation and design of better biodiversity policies and decision-making also in interlinked sectors such as health.

2.2 Developing the use of Science cafés

The EKLIPSE Science cafés were originally planned as events to disseminate research and activities conducted to answer various kinds of requests. The EKLIPSE Description of Work describes the cafés as part of Task 6.3:

Task 6.3. Ensuring civil society is informed and engaged. This task will ensure that societal actors including civil society and business (as described in tasks 6.1 and 6.2) are adequately informed and engaged in all relevant activities of the project (particularly WPs 3 and 4) and later on in the mechanism. -- To enlarge the outreach to new groups of citizens the task will also examine the possibilities of disseminating results through the European-wide network of Science cafés which typically operate in casual settings open to the public.

Furthermore:

The EKLIPSE Science Cafés will enable interested citizens and stakeholder representatives to exchange and develop views and knowledge regarding preferred policy options and policy-relevant research development with other citizens, researchers and policymakers, thereby providing an institutional structure to improve (e-)democracy and (e-)participation.[2]

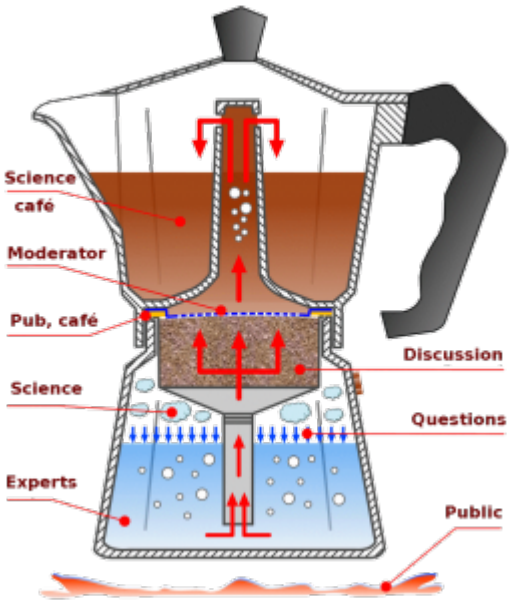

Figure 1. The "machinery" of a science café (Bagnoli&Pacini, 2011)

The idea behind science cafés was to bring people together for a relaxed dialogue based on the request and the initial research done on the topic and informed further by inputs from public policy and civil society. The café atmosphere should allow for an inclusive and low-threshold lively debate open to anyone willing to participate. The EKLIPSE science cafés would include both panelists and an audience and it would be crucial to ensure that enough time would be allocated to audience comments, questions and participation. The concept of science cafés aims to democratize science and bring it closer to the public and in this case also policy makers, as the request asked for discussion and responses that could be translated into policy. Additionally people were able to share their thoughts and research on the EKLIPSE KNOCK forum before and after the science cafés were held.

Any citizen can bring epistemologically important insight or surprises into the discussions while scientific knowledge is being presented 'in the making'. In this regard, Science Cafes create new governance models for research and innovation where the user, audience or key informant might become a main actor.[2]

The EKLIPSE science cafés aim to make an impact at the local and European scale, convey and spread ideas from the dialogues to broader audiences and decision makers, and to generate further discussion.

2.3 "The diverse values of nature" science cafés

In total three different types of science cafés were organized to deliver this request: 1) a face-to-face event in Budapest in Hungarian; 2) also in Budapest in Hungarian and face-to-face but with the option of online participation; and 3) EU-wide online café with speakers attending from three different locations and the audience participating mainly online in English. By organizing both local and international, face-to-face and online events we aimed to determine whether there is variation in the ideas and opinions on nature's values in Hungary compared to the EU but also how the dynamic of the conversation and participation might change when scaled up to an international or EU level. The cafés sought to test the ideas and assumptions outlined in the original request via bringing together researchers from different disciplines and representatives of civil society organizations and policy. The EKLIPSE cafés and the pre-discussion topics were promoted with the following invitation text on the KNOCK forum:

"Many ecological, economic and socio-cultural values are attributed to nature and the ecosystem services it provides. This wide range of values is emphasized in different ways in dynamic social contexts and across policy sectors.

We invite you to take part in a discussion on how diverse values related to biodiversity and ecosystem services are integrated, communicated and incorporated in policy and decision-making. Please feel free to share with us your knowledge, experiences, questions and doubts on this topic. We are looking forward to learning together from examples where diverse values have been successfully integrated into policy development at various scales.

Figure 2. Advertising the online science café at Impact Hub Budapest and at Facebook. Events were advertised both in English (at KNOCK and at the Facebook event page of the online café) and in the national languages.

EKLIPSE will host three science cafés discussing the topic during autumn 2017. Two of them will be held in Budapest, Hungary (in Hungarian) and one EU-wide online science café will focus on scaling up local examples. In these science cafés this forum discussion will be used as food for thought to develop innovative solutions to bringing diverse values into policy making."

Additionally we created a Facebook event for each café separately and the use of "#valuingnature" and hashtags translated into Hungarian was encouraged when discussing the cafés in Twitter and other social media. To maintain interest, we regularly posted brief notes about the topic and the invited speakers on the KNOCK Forum and Facebook event pages. Outputs from the cafés included short synthesis videos targeted towards a public audience, which can be found on the EKLIPSE website (http://www.eklipse-mechanism.eu/science_for_everyone).

2.4 The KNOCK Forum

A thread was created on the EKLIPSE KNOCK Forum to encourage discussion of the topic. Several researchers posted comments with references to their own published scientific articles or blog posts which were deemed valuable to the topic (Appendix 1). It was also considered important to encourage a dialogue about the topic in an approachable way therefore we created a second thread where the broader community could add to the discussion, however this did not result in any posts. A member of the EKLIPSE values request team moderated both threads and the literature was ultimately used to inform the facilitation of live discussions during the science cafés.

2.5 Zoom online facilitation tool

While planning the science cafes, we internally tested within the EKLIPSE team three different online participation or webinar tools (Google Hangouts, Big blue button and Zoom) before deciding to use the Zoom tool. Zoom provided the required features, mainly the roles of host, panelist and attendees. It also allowed for participants to register in advance, with a maximum capacity of 100 attendees per event. In the second café, we used the online tool Zoom to facilitate the participation of a panelist from Serbia and to enable citizens to join. This also allowed us to test the Zoom for use in the third EU wide online café.

For the 1.5 hour long, EU online café, we received 77 registrations out of which only 33 attendees participated. Some attendees reported having had difficulty connecting to the science café, but whether that was an issue with Zoom or a different individual technical issue is unclear. The tool also made it possible to record the science café to a cloud and stream for example on YouTube, which we did, but no register of YouTube viewers is available. The host and two panelists connected together from Budapest, one panelist joined from Helsinki and one from Montenegro. In Budapest and Helsinki additional EKLIPSE

staff managed technical aspects and moderated the discussion, prompting the audience polls and presenting the audience questions to the panellists.

In Zoom, attendees could use the Q&A, poll and chat box functions to comment on the conversation and ask questions. The polls for the audience were fed into the system before the science café and are presented in the following subchapter. The Zoom tool and the online execution of the science café worked well and the content of the café was also fruitful. More time for audience questions and reflective discussion on the polls and other comments would have been desirable and will be taken into account when planning the next café. The timing of the café in a European setting was somewhat challenging due to different time zones. The café started rather late in Finland, at 20:30, ending at 22:00 on a Monday evening. Whether the chosen language, English, caused barriers to participation is unknown.

In hindsight, the biggest fault in the Zoom tool was the output data after the café. Zoom produces excel sheets of registered people, attendees and the polls, but the format is not well organised and for instance in the analysis of the poll results, the results were less clearly presented than the information displayed on the screen during the science café itself. Also personal microphones for all the panellists could have helped improve the sound quality, even though it worked mostly very well.

After the science café, a very brief survey was distributed among participants asking about the technical usability, quality of the contents and other aspects of the café. 15 participants responded, the results of which will be analysed in a separate WP6 societal engagement reflection paper on the online science café method.

3. The first science café in Hungary

Figure 3. Discussion at the 1st Hungarian science café was eased by the real coffee house atmosphere and the use of the national language.

The first EKLIPSE science café on the values of nature was held at the local level on 11th September 2017 in Budapest, Hungary. As the first café in a series, the aim was to show the diversity and incommensurability of different values of nature and ES and to initiate a public dialogue about this diversity. The aim was to carry out more in-depth discussions in the following science cafés. The speakers, with their diverse backgrounds, approached the topic from three different disciplinary perspectives:

- **Anikó Kovács-Hostyánszky**, an ecologist with empirical experience in ES assessment and internal perspectives from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) pollination assessment conveyed her thoughts on ecological values.

- **Zoltán Szabó**, an environmental economist shared his perspective about how economic values and externalities are dealt with upon integrating values into decision-making. He shed light on the business logic and the potential usefulness of monetary incentives to internalize the negative and positive impact of the economy on ecosystem services.
- **Farkas Judit**, a cultural anthropologist contributed by introducing socio-cultural values into the discussion, and talked about the spiritual and philosophical aspects of valuation, mainly based on her experiences with the communities of eco-villages.

Based on the lively discussion of this café the citizens involved did not question that diverse values exist, but rather welcomed the pluralistic approach and asked how these values could feed into decision-making. Critical questions about "which language" is the most effective when we would like to convince policy makers to make more biodiversity friendly policies and citizens to make more conscious consumer choices were raised. Also the power of "money" was mentioned as a strong argument for guiding policies and the effectiveness of talking about cultural and ecological values was somewhat questioned by the people participating in the café.

Video of the café: https://www.youtube.com/watch?v=qDoBmjSTg1g&t=10s

4. The second science café in Hungary

The second EKLIPSE science café held on researcher's night, 29th September 2017 in Budapest, Hungary aimed to discuss policy integration and uptake of the plural values with a focus on real life applications. The researchers' night is a Europe-wide special event, funded in the frame of the Marie Sklodowska-Curie Action, which is organized each autumn to boost public awareness of the positive role of research in society, especially among young people. Research and education bodies can organize events such as workshops, exhibitions, lectures, demonstrations etc., which are all open to the public and aims to build a bridge between science and society. By joining the programme, the host institution can use the logo of the European researchers' night and the offered events are listed in the official program. The three speakers invited to this science café represented again diverse perspectives on the topic, especially some of the more practical aspects of values integration:

- **Bálint Halpern** represented Birdlife Hungary, an NGO focusing on diverse aspects of nature conservation in Hungary, and shared his experiences with engaging citizens in nature conservation projects, both from the point of view of co-creating scientific knowledge (citizen science) and raising awareness through participation.
- **Zsolt Molnár** is an ethno-ecologist working at the Centre for Ecological Research at the Hungarian Academy of Sciences (HAS), and acting as Coordinating Lead Author of the IPBES Global Assessment Chapter 2 on Nature. [1]He joined the science café online and shared his views on how values are expressed and taken into account at the local and the global scales and how these scales can or cannot be integrated.
- **Ágnes Kalóczkai** is an agri-environmental engineer working also at the Centre for Ecological Research, HAS, and coordinating stakeholder participation in the Hungarian national ES assessment process, talked about how diverse values are represented in conservation policy at the national level, and how

[1] https://www.ipbes.net/deliverables/2c-global-assessment

stakeholder engagement can be achieved at the policy level to increasingly build decisions on an integrated value approach.

Integrating the diverse values of nature at different levels of decision-making (individual, national and international) was at the centre of this discussion. Whether links between the different levels exist and if so, how they interact or should interact was discussed. The idea that people have many simultaneous roles as experts, decision makers and ordinary citizens was seen as facilitating a natural interaction between individual and higher levels of decision-making. However, feedback loops between the individual and the national or EU level decision-making process through regulations and their enforcement could be taken into account more consciously. The question of which level of decision-making should be targeted if we would like to achieve considerable change in terms of integrating diverse values into decisions was also brought up. The individual level was seen as most appropriate for bringing in new perspectives, broadening the value system, and changing behaviour through everyday decisions.

Figure 4. Invited speakers and facilitator of the 2nd Hungarian science café. From left to right: Ágnes Kalóckai, Zsolt Molnár (on video), Bálint Halpern, and Eszter Kelemen. Interaction between the speakers were limited by the fact that those who were present in person could not see easily the distant participant.

Echoing the discussion of the first science café, we considered whether a diverse approach to values or rather one or a few dimensions are incorporated into initiatives. In this café, ecological and economic values were placed at the forefront and socio-cultural values were seen as the most difficult to bring into the dialogue process.

Video of the second café: https://www.youtube.com/watch?v=a9v4PZFwc7g&t=5s

5. The EU-wide online science café

Lastly an online EU-wide EKLIPSE science café was held on 20th November as the concluding event to discuss the diversity of nature's values and their integration into policy making. The planning of this online event started simultaneously with the planning of the two previous cafes and as mentioned above, the promotion of also this cafe was also done via the EKLIPSE website, a Facebook event, Twitter, the EKLIPSE keep me posted list and personal emails. Based on the first cafes and a careful re-reading of the request an outline for the discussion of this EU wide café was created to help the host guide the conversation and make sure certain topics are covered.

5.1 The discussion

The aim was to broaden the horizon and scale the discussion from the previous national level cafés to the EU-level. Commonalities and conflicts regarding integration of the values and conclusions, and solutions to overcoming barriers were sought with four panellists representing science, civil society and policy:

- **Maurice Hoffmann** represented Alter-Net (Europe's Ecosystem Research Network), an organization that brings scientific insights to European policy makers involved in environmental issues. Alter-Net is at the front line of combining disciplines like ecology and socio-economics.
- **Eszter Kelemen** from the Environmental Social Science Research Group (ESSRG) is a member of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) expert group on values and valuation. Having an economic background she expressed using social scientific and deliberative methods in her fieldwork how people think about the values of nature.
- **Jouni Nissinen**, president of the European Environmental Bureau (EEB) contributed knowledge and expertise from the non-governmental sector about diverse environmental issues related to climate, energy and biodiversity conservation and also regarding formulation of the Agenda 2030 for Sustainable Development.
- **Marina von Weissenberg** from the Finnish Ministry of Environment (MoE) has a background in political science and in global policy and international affairs. Her range of interests in social, political and human relations brought a good mix of perspectives on bridging diverse values and policies of nature on national and international levels.

Figure 5. Discussion at the online science café in the Budapest Hub with the distant speakers in the background. Having a monitor in front of the speakers helped the interaction.

The discussion for this event was specifically planned around the knowledge needs expressed in the request. The emphasis was therefore on communication and feeding the values into decisions for better-informed and more holistic policies. The language, rhetoric and concepts used and the need to develop new indicators were identified as key to getting messages across. Finding links and defining the possible roles between researchers and policy-makers, and between policy-makers, voters and other stakeholders contributing to the development of policy in diverse direct and indirect ways, was perceived as essential yet tricky. The audience also questioned whether there was sufficient interaction between different disciplines, such as resource sciences related to fisheries or water management and biodiversity research when it comes to trying to influence policy.

The café also discussed whether shared values existed in Europe. There was a common understanding as to why biodiversity should be valued but the ways in which each country, region, city, individual does this is different due to prioritization of issues that we see as affecting us. How knowledge and fundamental values

could translate into action was also seen as a major challenge. Partially to answer this dilemma, ideas about including the general public in knowledge creation and dissemination were discussed.

Broader audience participation was encouraged in this event via pre-prepared polls and spontaneous audience questions posted in the chat box. The polls were commented on by the panellists and served as conversation starters. They were linked to the specific ideas brought from the previous cafés and the request documents.

POLL 1 Which sources of information are most relevant for building your values regarding nature?

Scientific research was identified by online participants as the main source of information, with traditional and social media having an equally important role. Peers and colleagues received the least votes. One citizen's comment further elaborated that the relationship between these sources should be seen so that media communicates what research tells us and peers both create and disseminate the information.

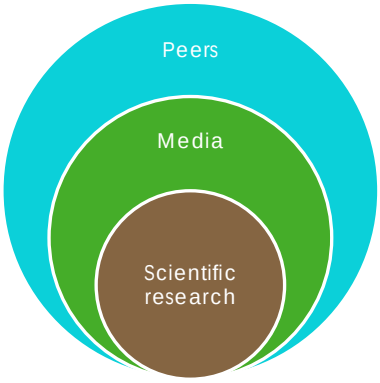

Figure 6. Participants' answers as categories to the question "which sources of information are most relevant for building your values regarding nature?"

POLL 2 What works when arguing for biodiversity in policy?

The second poll identified money as the most effective argument for influencing policy. This was questioned by the panel and the quotes below show some different perspectives from the panellists and citizens.

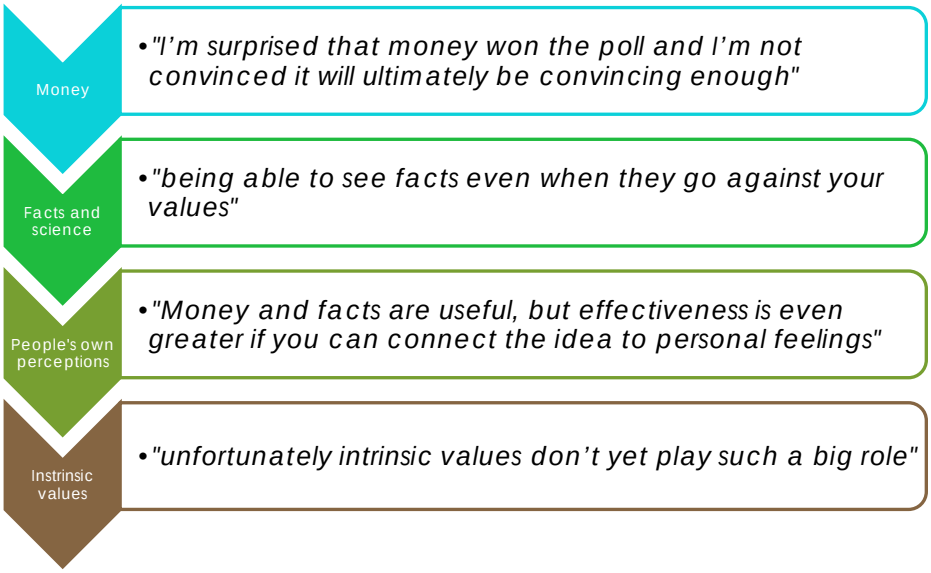

Figure 7. Examples of the participants comment on to the question "What works when arguing for biodiversity in policy?"

POLL 3 What could be the strengths of the European Union in integrating various nature values across Europe?

Cooperation and building networks for inclusiveness were seen as core strengths for value integration in Europe. The importance of this is possibly explained by the audience probably having good knowledge of the EKLIPSE project. The panellists however highlighted the importance of integrative concepts and the idea that all of the options presented should be considered in relation to one another as good tools for advancing collaboration

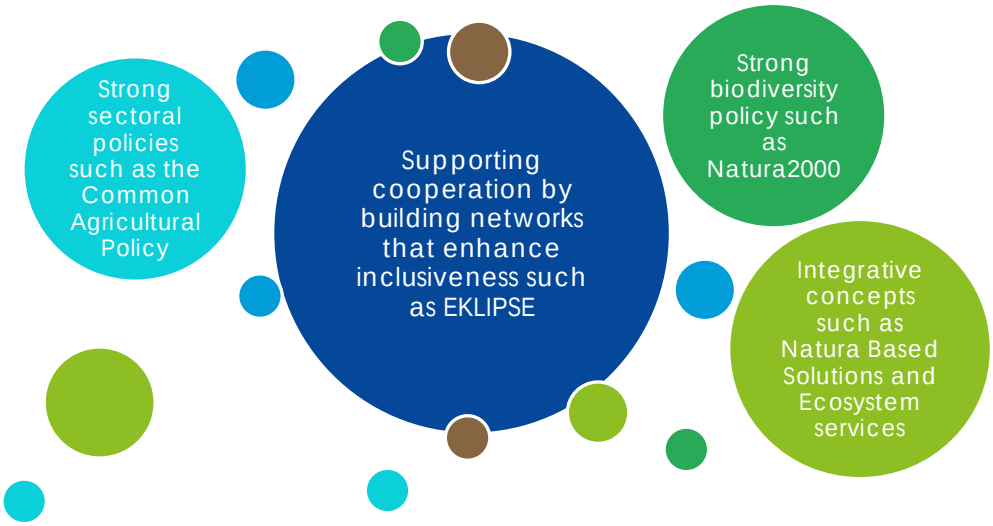

Figure 8. Conclusion of the participants' answers as to the question "What could be the strengths of the European Union in integrating various nature values across Europe?". Bigger circles reflected larger number of answers.

Since this final café focused on solutions the outcomes are further elaborated and structured in the upcoming sections dealing with conclusions, answers and lessons learnt.

Video of the EU-wide science café: https://youtu.be/KaVWAjQHA0I

6. Concluding the values discussion

The question of the values request "how can nature's diverse values be incorporated into and reflected by public policy?" was elaborated in the science café discussions rather widely. Based on our synthesis of the discourses, we next make two concluding answers to the question. In order to incorporate diverse values of nature we need more meaningful communication as well transdisciplinary and inclusive approach.

The question of the values request "how can nature's diverse values be incorporated into and reflected by public policy?" was elaborated in the science café discussions rather widely. Based on our synthesis of the discourses, we next make two concluding answers to the question. In order to incorporate diverse values of nature we need more meaningful communication as well transdisciplinary and inclusive approach.

6.1 Meaningful communication

Once there is a clearer understanding of what is desired and should be carried into policy, the issue of translating the knowledge-base into decisions arises. A common language is central here, as is visualizing the diverse possible future scenarios that may result from an action. Concepts such as ES and Nature Based Solutions (NBS) can be seen as efforts to construct this common language and are especially helpful when transmitting ideas to larger scales, such as the EU, yet their implications and relevance also need to be clarified and evaluated at a local level. Science-policy communication projects such as EKLIPSE may take a role in this by linking between different stakeholders and by mainstreaming various, new scientific concepts to larger audiences.

Connecting issues to something concrete that is easily relatable in our everyday lives can also help highlight the underlying values that people hold. For example showing rising numbers of visits to national parks might reflect the idea that people find the recreational and cultural values of nature important. Raising awareness by promoting the protection of certain charismatic species (e.g. whales or pandas), or ecosystems (e.g. wetlands or rainforests), has also traditionally been a way, especially for NGOs, to connect broad concepts like biodiversity to smaller more tangible elements. Appealing to people's emotions and promoting the importance of nature for nature's sake (i.e., intrinsic value), can be effective in certain ways and to certain audiences.

Ideally, the common language would also allow wider inclusiveness in decision-making processes. The messages and evidence can be the same, but new innovative ways to communicate to diverse audiences are necessary. Arts, visual formats and other forms of less traditional ways of expression may help to open up the paths from research to decision-making for new audiences. Also the "where" we communicate issues needs to be considered. Partially for this reason EKLIPSE is also experimenting in events, such as the science cafés and KNOCK forum, to identify places where diverse sectors of the public can be reached and to encourage active participation by all at the science-policy-society interface for better informed decision-making. Keeping the dialogue open and providing diverse spaces for it are essential.

In communication also the (policy) level to which we are communicating is crucial – should we target grass-roots actors first or go straight to the European Commission for example? We need to become aware of the key influencers and the best ways to approach them. The importance of the general public for both research and policy needs to be acknowledged better, since as was pointed out in the EU-wide café, if research can convince the public, the public can influence policy-making through voting. In addition to "who", also the "when" is relevant. Certain issues and values may gain momentum in unpredicted ways and being alert to windows of opportunity can lead to unforeseen breakthroughs. Riding the waves of megatrends or hot topics can be beneficial to advancing smaller issues and for re-framing which values are incorporated into wider discourses. When targets are set that impact the globe as a whole and require global efforts, such as halting biodiversity loss, being vocal can help things progress and create an atmosphere of working together for a greater good.

6.2 Transdisciplinarity and inclusiveness

The science and research that is communicated to policy makers should also be trans-, multi-, and interdisciplinary, meaning cooperation between theorists and practitioners and combinations of different scientific disciplines and their methods and tools. This is one of the crucial steps to integrating truly diverse values instead of favoring single-value perspectives or discriminating certain values in decision-making for sustainability. It is important to incorporate integrated approaches into existing policy and decision-making

processes whereas integrated valuation can help solve various societal conflicts. This has been noted in different research communities and projects dealing with the issues of diverse values of nature or ES such as BIOMOT and IPBES, as were also identified by the requester.

Transdisciplinary science also includes citizens as knowledge producers and acknowledges the values of diverse knowledge holders. The wider inclusion is also a partial solution to the above mentioned over-representation of certain values in science. Especially including groups with differing worldviews and ways of knowing, such as indigenous groups, can promote the existence of plural values even though their integration into what are basically western modes of democracy and decision-making can still remain challenging. Thus, we need to find meaningful ways to interact among different stakeholders at the science-policy-society interface. Inclusion of citizens need not always be for their contribution to scientific projects (e.g., citizen science) but also for general inclusion of the public in valuation processes happening at high levels of science-policy interactions. Stepping out of "ivory towers" and bringing issues closer to the people living with their implications should be a priority.

It can also be challenging to integrate diverse social groups into societal debate on diverse values of nature. Especially marginalized groups, for example the young, women, immigrant communities, and the unemployed might often remain at the margins in certain contexts even though reaching them and their input could be important. Perhaps some of the innovative ways of communication mentioned in the previous subchapter can help to involve them better in dialogue in diverse values of nature. .

Relating nature's values to other policy sectors and communicating these links can also help push forward policies more rapidly. As an example, the connection between biodiversity and human health was mentioned. Additionally not only combining and linking sectors, but also values and arguments can be beneficial. For example arguing solely for the protection of wetlands for the sake of biodiversity may not inspire action, but adding links to climate change and other impacts may strengthen the argumentation.

7. Lessons learnt

Despite little disagreement amongst science café participants regarding the existence and importance of diverse values of nature, the challenge of answering the original request still remains since it is difficult to draw clear pathways of what works for policy integration. Some of the conclusions above may serve as good starting points, but it is challenging to evaluate what was the trigger or deciding factor for any particular breakthrough.

Through the science cafés, we were able to bring out several perspectives as to why the question of harmonized integration into policy is so difficult. As we saw, integration of diverse sectors of the community is central to bridging gaps between science, policy and society, suggesting more effort on this is required. Science cafes, as well as other means encouraging societal debate are essential in order to better understand various perspectives and synergies between them.

How to mainstream values other than monetary or economic values also remains a difficult question and was perhaps not answered conclusively by this research approach. However, the discussions do give hope of a shift to more integrative approaches.

7.1 Future considerations

The original request highlighted the need to create clear pathways of modes of action for policy. Throughout our discussions the inclusion and relative power of the general public were also brought up indicating a need to shed light on the mechanisms of public participation at EU and national scales in various steps of decision-making in order to democratize and add transparency to planning and decision-making processes.

The above mentioned issues also relate to the question of how to evaluate which of nature's values are prioritised in decision-making. Even though some might disagree with which values are prioritised, making more transparent the reasoning behind chosen values and options represented by research and policy could help people accept and understand choices better and perhaps learn to advocate for their own ideas differently in the future.

Acknowledgements

The authors would like to thank all of the invited speakers of the three science cafés and our hosts of the cafés Eszter Kelemen in Hungary and Allan Watt in the EU-wide science café.

Thank you Konsta Hellsten, Reka Ugron and Daniel Horvath for producing videos based on the science café; Thank you Konsta and the Hungarian team also for technical support in the online cafés.

Most importantly thank you to all the citizens who contributed to the science cafés, Facebook events, Twitter feed and the KNOCK Forum!

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Appendix 1: Literature from the KNOCK forum

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European Union Funding
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Grant agreement 690474