Expert organizations’ institutional understanding of expertise and responsibility for the creation of the next generation of experts: comparing IPCC and IPBES

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ABSTRACT
This perspective paper argues for the importance of a better understanding of expert organizations’ roles in creating expert knowledge and these organizations’ responsibilities in building the next generation of experts. To what extent is this responsibility theirs, do they take it on, and what are the consequences if they do or do not? The argument is based on a comparison of the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Service (IPBES). Using a theoretical framework that defines expertise, expert communities, and expertise in organizations, the analysis explores and explains the structural preconditions that guide these organizations in their work. The paper shows how the IPCC and the IPBES play similar but different roles in developing expertise and creating the next generation of experts due to differences in their current organizational structures. The paper also shows how the IPCC and the IPBES are not mere facilitators or coordinators of existing expert knowledge. Instead, the IPCC and the IPBES also create experience-based situational expert knowledge that influences the epistemic communities that inform environmental governance on climate change and biodiversity loss and enable transformative change for a sustainable future.

1. Introduction
To face current global environmental challenges and create transformative changes toward a sustainable future, expert knowledge and constructive relations between science and policy are necessary. Both the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) were established as boundary organizations to create such constructive relations (cf. Guston 2000; UNEP 2010; Gustafsson and Lidskog 2018). By gathering, assessing, and communicating the world’s expertise on climate change and the loss of biodiversity and ecosystem services, both the IPCC and the IPBES aim to be policy-relevant but not policy prescriptive. However, as boundary organizations, the IPCC and the IPBES are key actors in regard to making use of their expertise to create and shape science-policy relations both within and beyond their organizational boundaries. Thus, even though they are not policy prescriptive, the IPCC and the IPBES are growing as epistemic authorities in their respective fields, which gives them both a position of great power and responsibility in global environmental governance (e.g. Hume and Mahony 2010; Stevance et al. 2020). Due to the IPCC’s and the IPBES’ positions as expert organizations, this perspective paper argues for the importance of exploring and problematizing their role and influence on what is defined and understood as expertise as well as these organizations’ involvement in the creation of the next generation of experts.

Both the IPCC and the IPBES are well-researched organizations. They have both been studied and analyzed in different ways regarding, for example, their enrollment of expertise (e.g. Haas and Stevens 2011; Heubach and Lambini 2017; Montana 2017), organizational structures (e.g. Beck 2011; Vadrot 2014), and construction of science-policy relations (e.g. Beck and Mahony 2018; Koetz et al. 2012; Pearce et al. 2018). This paper draws from and contributes to this research tradition. As two similar yet different organizations, the IPCC and the IPBES have also been previously compared (e.g. Beck et al. 2014; Brooks et al. 2014; Obermeister 2017). However, the knowledge gains possible from comparing these two organizations is not in any way exhausted. For example, there is still a lack of knowledge regarding how these organizations differ in their influence on the definition and creation of expertise and their socialization of the next generation of experts. This knowledge is important if we are to understand the construction of science-policy relations and the expertise needed to...
create transformative changes toward a sustainable future. This study aims to contribute such knowledge by comparing the IPCC’s and the IPBES’ current organizational arrangements and structural preconditions. These organizational arrangements define what expertise has come to mean in these organizations and structure the creation of the next generation of experts. The analysis is guided by three main questions: (i) what kind of expertise does these organizations create, (ii) what responsibility do expert organizations have in building expertise and the next generation of experts, and (iii) what are the consequences if expert organizations engage in building expertise or, conversely, do not?

In this paper, the creation of expertise is understood and analyzed through an analytical framework that combines the concepts of substantive expertise and relational expertise (Irwin and Wynne 1996; Collins and Evans 2007; Haas and Stevens 2011; Lidskog and Sundqvist 2018). This framework and community of practice (Haas 1992; Wenger 2000; Wagner et al. 2019), and technical knowledge and experience-based situated knowledge (Weber 1947; Miller 1970). By making a connection between forms of expertise and forms of communities, the paper will emphasize the social element of knowledge production and expertise with the intent of opening the door to future explorations of the IPCC and the IPBES as social arenas where multiple knowledge processes and knowledge practices take place and develop in relation to one another. Comparing similarities and differences between the IPCC’s and the IPBES’ current organizational arrangements will reveal and problematize taken-for-granted institutional understandings of how knowledge is presented and prioritized by expert organizations, what actors and institutions are expected to create expert knowledge, and how the system that enables this knowledge production is upheld.

The paper is organized as follows. The second (following) section presents the paper’s theoretical framework by introducing the concepts of substantive expertise, relational expertise, epistemic community, the community of practice, technical knowledge, and experience-based situated knowledge. The third section gives a short presentation of the IPCC and the IPBES and their organizational similarities and differences. The fourth section explores and analyzes the current organizational arrangements and the structural preconditions of the IPCC and the IPBES, their objectives, and their shared interest in introducing early career researchers to their work. The analytical argumentation combines previous studies of the IPCC and the IPBES, in particular, and previous studies of expert organizations, in general, with analysis of institutional documentation from both the IPCC and the IPBES. These previous studies were identified and used as individual pieces of a puzzle that, when analytically pieced together with the theoretical framework’s help, shows the larger picture of expert organizations’ relation to expertise. The final section discusses the consequences if an intergovernmental expert organization takes on the responsibility of creating expertise and the next generation of experts, as well as the consequences if they do not. The section also offers a concluding argumentation on the importance of acknowledging the roles of expert organizations in and influencing the creation of expertise on climate change, biodiversity, and ecosystem services and their roles in creating the next generation of experts.

2. Theoretical framework on expertise

This paper makes use of a combination of concepts that together create a framework that theoretically describes how to understand what constitutes (i) expert knowledge (substantive expertise and relational expertise), (ii) expert communities (epistemic community and community of practice), and (iii) expertise in organizations (technical knowledge and experience-based situated knowledge).

In the literature, expertise is understood theoretically in two different ways. First, expertise is described as a specific form of knowledge that a person acquires and holds and that could be brought to and from social settings (Collins and Evans 2007; Haas and Stevens 2011; Lidskog and Sundqvist 2018). By taking this position of a substantive view on expertise, expert knowledge is understood as specialized knowledge that complements other forms of less specialized and more expert knowledge (Collins and Evans 2007). This substantive view is to be contrasted with a relational view that describes expertise as a social attribution made by others (Irwin and Wynne 1996; Lidskog and Sundqvist 2018). Thus, expertise is not something substantially inherent in knowledge but a characteristic that is determined in relation to other knowledge forms and actors. On a theoretical level, these two views on expertise seem to be mutually exclusive. However, on an empirical level, previous research has shown how expertise is often identified through a combination of substantive and relational considerations (Lidskog and Sundqvist 2018). For example, to be an expert, there is often not enough for someone to simply hold specialized knowledge: the person also needs to be perceived by others as an expert (Gustafsson and Lidskog 2018). By making use of these two concepts, this paper’s analysis study how the current organizational arrangements and structural preconditions of the IPCC and the IPBES implicitly define what constitutes expertise and how this comes to influence the
creation of the next generation of experts by structuring the introduction of early career researchers.

To describe how to understand what constitutes expert communities, the concepts epistemic community and community of practice are added to the above-presented understanding of expertise as a combination of substantive and relational factors. The concept of epistemic communities refers to ‘networks of knowledge-based experts’ that play an important role in ‘articulating the cause-and-effect relationships of complex problems’ (Haas 1992, p. 2). An epistemic community is informal and often spatially scattered, held together discursively through shared beliefs, values, and a notion of validity to enhance a particular set of knowledge (Creplet et al. 2001; Haas 2001; Wagner et al. 2019). The recruitment and introduction of new members to an epistemic community was based on estimates of the extent to which new actors could contribute to the community’s knowledge production (Creplet et al. 2001). In comparison, communities of practice have been described as ‘social “containers” of competence’ (Wenger 2000, p. 187). Through the everyday practices of the community, right and wrong are negotiated, creating knowledge with the potential to substantially and relationally be considered expert knowledge (Wenger 1998; Benn et al. 2013). The collective quality of knowledge production also results in the coproduction of individual and organizational identities that allow a community’s members to develop as knowledge holders and potential experts. The development of a community of practice depends both on clear leadership and on close ties between the community’s members (Wenger 2000).

The introduction of new members is important for the community to gain both critical mass and legitimacy (Lave and Wenger 1991). However, it is important that recruitment is regulated so that the community does not grow too fast but instead allows for socialization to take place and for constructive coordination of the community’s activities.

As both epistemic communities and communities of practice are built around (expert) knowledge, there is ‘the possibility for one form of community to evolve into the other’ (Creplet et al. 2001, p. 1530). The explicit knowledge and expertise of an epistemic community could guide the development of a community of practice (Wagner et al. 2019). Similarly, the tacit knowledge generated within a community of practice could develop beyond the boundaries of the community and gain general discursive legitimacy, thus creating or influencing epistemic communities (Creplet et al. 2001; Akrich 2010).

The two concepts in this paper’s analysis will be used to explore and explain how the IPCC’s and the IPBES’ current organizational arrangements and structural preconditions, for example through the introduction of early career researchers, create expert communities and expertise in the IPCC and the IPBES.

To understand what constitutes expertise in organizations, the theoretical framework will be additionally complemented with the two classic dimensions of expertise in organizations as described by Weber (1947) and emphasized by Miller (1970) with the concepts of technical knowledge and experience-based situated knowledge. These concepts describe expertise as including both ‘technical knowledge […] and […] knowledge growing out of experiences in the service’ (Weber 1947, p. 339) and as including both ‘(a) formal training in the skills essential to the organization and (b) the knowledge of facts and documentary material a member possesses about how his organization carries out its activities’ (Miller 1970, p. 92). Looking at the relation between technical knowledge and experience-based situated knowledge, it is possible to see parallels to the relation between the epistemic communities and communities of practice discussed above. Whereas epistemic communities are built on technical knowledge and held together discursively, communities of practice are built on and held together through experience-based situated knowledge. Thus, the two concepts technical knowledge and experience-based situated knowledge will in this paper’s analysis be used as a complement to understand expertise in expert organizations such as the IPCC and the IPBES.

3. The IPCC and the IPBES

The IPCC and the IPBES are similar in many respects. They are both intergovernmental organizations that are open for membership to all UN governments (Agrawala 1998a, 1998b; Koetz et al. 2012). They also hold similarities in their procedural rules and their objective to produce policy-relevant but not policy prescriptive knowledge assessments (Brooks et al. 2014). However, the IPCC and the IPBES also differ in how they came to be and what their full work includes today (Beck et al. 2014; Vadrot 2014, 2020). In short, the IPCC has a long history, is well institutionalized, works primarily with different forms of scientific knowledge, and has a well-established reputation within both the science and policy communities (Hulme and Mahoney 2010; Brooks et al. 2014). The IPBES, on the other hand, has a short history; has not yet been fully institutionalized as an organization; works explicitly to synthesize multiple forms of knowledge, such as scientific, indigenous, and local knowledge; and is starting to become known in the science and policy communities (Koetz et al. 2012; Obermeister 2017; Stevance et al. 2020).
The IPCC’s and the IPBES respective work programs are decided on by their member governments at their annual Sessions/Plenary meetings, and the execution of these work programmes for both organizations includes experts with different disciplinary backgrounds, complementary skills, and professional merits (Haas and Stevens 2011; Montana and Borie 2016; Heubach and Lambini 2017; Montana 2017; Gustafsson and Lidskog 2018). Established as recently as 2012, the need to introduce new experts has been crucial for the IPBES in becoming an expert organization (Díaz-Reviriego et al. 2019; Stevanse et al. 2020). In the case of the IPCC, with its longer history and thus stronger institutional foundation, the need and importance of introducing new experts have been made explicit in their selection criteria, which state that the selection should aim for ‘scientific, technical and socio-economic expertise, including the range of views; geographical representation; a mixture of experts with and without previous experience in the IPCC; gender balance; experts with a background from relevant stakeholder and user groups, including governments’ (IPCC 2013b, p. 4).

In addition to their work to introduce new senior world-leading experts, both the IPCC and the IPBES have also identified that it is important to enroll and introduce researchers who are in the early stages of their careers (van der Veer et al. 2014; Lim et al. 2017; Gustafsson et al. 2019). In the IPCC, early career researchers have been enlisted as volunteer Chapter Scientists since the IPCC’s 5th assessment report (Schulte-Uebbing et al. 2015). The IPBES has also invited early career researchers to participate in the role of Chapter Scientist, and since 2015, the IPBES has, in addition to this, enrolled early career researchers to participate in a fellowship programme (Gustafsson 2018).

The differences and similarities in the historical, as well as ongoing negotiations that have structurally made the IPCC and the IPBES develop into what they are today, are crucial for their institutional understanding and creation of expertise. These negotiations are relational processes that include multiple actors and work processes (Agrawala 1998b; Vadrot 2014; Díaz-Reviriego et al. 2019). In this paper, I will return to these relational aspects of the IPCC and the IPBES in the concluding discussions. However, the focus of this paper’s analysis is the current organizational structures, which are both the outcome of these historical processes and the current preconditions for the organizations’ institutional understanding and creation of expertise and the next generation of experts. This focus is a deliberate choice. As the structural preconditions create the social context within which relations between actors are established and work is executed, it is important to explore and explain these structures, how they define what expertise means and how they organize the creation of expertise by structuring the introduction of early career researchers as the next generation of experts. This exploration of organizational arrangements and structural preconditions will start by looking at the objectives of the IPCC and the IPBES.

4. Expertise, expert communities, and expert organizations

The principles that govern the IPCC’s work are stated as follows:

The role of the IPCC is to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation. (IPCC 2013a, p. 1)

This role is achieved by gathering world-leading experts in the field of climate change and by having them follow a standardized process to produce assessments, synthesis, and special reports ([IPCC] The Intergovernmental Panel on Climate Change 2013b). In these organizational arrangements and structural preconditions for the IPCC’s work, expertise is implicitly understood as specialized knowledge with substantive expert quality. This expertise is gathered and brought to the organization by enrolling scholars who possess this special form of knowledge (Gustafsson 2018; Haas and Stevens 2011; cf. Collins and Evans 2007). Thus, as an expert organization, the IPCC relies on the expertise and credibility that comes from facilitating an epistemic community on climate change (Hulme and Mahoney 2010; Heink et al. 2015; Gustafsson and Lidskog 2018). Following this substantive view of expertise, the creation of expertise and experts is implicitly understood by the IPCC as located in the everyday practices of academia and research facilities.

This institutional understanding of expertise in the IPCC and the actions that follow on this could be commented on as not surprising and could perhaps even be referred to as the obvious choices of action. However, in response to this comment, we must remember that focusing on these choices rather than dismissing them as the only and natural way of operating reveals taken-for-granted understandings of what knowledge is presented and prioritized as expert knowledge and how expert communities and expert organizations are created. Therefore, let us focus on these choices.

The IPCC’s view on expertise primarily comes to the fore in the structural preconditions that guide two choices: (i) how to support the creation of the next generation of experts and (ii) how to manage already
existing expert knowledge. First, the IPCC chose to use its 2007 Nobel Peace Prize award money (IPCC 2020) to create a scholarship programme that economically supports graduate and postgraduate students from developing countries in their academic studies. This choice confirms that the IPCC formally does not see it as their responsibility to create new expertise or the next generation of experts as part of their assessment processes, even though the IPCC has identified that its future development depends on capacities being built among early career researchers, especially among early career researcher from developing countries. This institutional understanding of the IPCC’s role in creating expertise was reaffirmed in 2015 by the IPCC’s internal Task Group on the Future Work of the IPCC, who stated that ‘training and capacity building is outside of the mandate of the IPCC’ (IPCC 2015, p. 6). Instead, by establishing the scholarship programme, the IPCC has put in place a current organizational structure that identifies academia and research facilities as the organizations formally responsible for creating new expertise and the next generation of experts. It also identifies the IPCC as a body able to indirectly support these organizations in their work by supporting students. Thus, without holding the formal responsibility of creating expertise, the Nobel Peace Prize money has allowed the IPCC to formally, in parallel with the organization’s main objectives, support the creation of new expertise and the next generation of experts among scholars from developing countries participating in academic settings over the world.

Besides revealing how the institutional understanding of expertise impact how IPCC has chosen to support the creation of the next generation of experts, the IPCC’s scholarship programme also reveals that the understanding of expertise was only one amongst several factors that came into play in its creation. Instead, the scholarship programme shows how the question of expertise intersect with other structural conditions within the organization, such as the timeline struggle within the IPCC to address a geographical bias concerning the representation of scientists in favor of the global north, a struggle that IPCC share with the IPBES (e.g. Agrawala 1998a, 1998b; Biermann 2002; Ho-Lem et al. 2011; Pasgaard et al. 2015; Montana and Borie 2016; Heubach and Lambini 2017). However, to further our knowledge of expert organizations’ understanding of their responsibility for the creation of the next generation of experts, this paper stress the importance to focus the impact of these organizations’ institutional understanding of expertise. Therefore, an important issue for future research on the creation of expertise will be to explore the consequences of how geographical representation intersects with expert organization’s institutional understanding of expertise.

Second, as expertise is understood as specialized knowledge held by scholars, existing expert knowledge is in the first step managed by the IPCC by enrolling world-leading specialized knowledge holders on the topic of climate change. These knowledge holders are enrolled to participate in the IPCC assessments based on their current qualifications to contribute expertise to the IPCC as an epistemic community. Scholars who have specialized knowledge in the field of climate change may be enrolled in contributing roles such as Coordinating Lead Author, Lead Author, Review Editors, or Contributing Authors. Scholars who on the other hand are early in their career – not yet world-leading specialized knowledge holders – may instead be enrolled as Chapter Scientists to support chapter teams with the technical aspects of the assessment (Gustafsson and Berg 2020; Schulte-Uebbing et al., 2015). Thus, rather than being a full member of the epistemic community in the IPCC, early career researchers participate as visitors in the epistemic community. These visitors both contribute their current skills and gain in-depth knowledge of the community’s workings, which makes it easier for them to eventually develop into full community members (cf. Hughes and Paterson 2017). This way of supporting and introducing senior and early career researchers reveals how the IPCC’s structural preconditions include a hierarchical dimension in which scholars with a high amount of specialized knowledge are prioritized over those with less and in which science is prioritized over other knowledge systems (Beck 2011; Haas and Stevens 2011; Gustafsson and Berg 2020).

When turning to look at the structural preconditions that guide the IPBES’ work to reach their main objective, it is again the substantive view of expertise that comes into view, at least to begin with. To reach their objective to ‘strengthen the science-policy interface for biodiversity and ecosystem services for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development’ (UNEP 2010, p. 5), the IPBES has taken the same strategy as the IPCC and gathers expertise by enrolling world-leading specialized knowledge holders to produce policy-relevant assessment reports (Gustafsson and Lidskog 2018). However, instead of including a hierarchical dimension to this view on expertise, the IPBES combines their substantive view of expertise with a pluralistic dimension that adds a relational element to their implicit institutional understanding of expertise (Diaz-Revirigeto et al. 2019).

The IPBES’ enrollment of experts is, similar to the IPCC’s enrollment process, based on current merits, which require that for one to become an expert in the IPBES, an actor needs to hold specialized knowledge that they will bring to the IPBES’ work (Gustafsson and Lidskog 2018). However, in the eyes of the
IPBES, specialized knowledge is not exclusively found within the sciences (Díaz-Reviriego et al. 2019). Instead, expert knowledge on biodiversity and ecosystem services is seen to include multiple knowledge systems, such as scientific, indigenous, and local knowledge (Montana and Borie 2016; Heubach and Lambini 2017; Montana 2017). As a consequence, to develop as an expert organization, the IPBES is working to include all of these knowledge systems through a variety of different experts (Díaz et al. 2015a, 2015b, 2018; Timpte et al. 2018). A scientific expert is not, per se, also an indigenous expert or a local expert and vice versa. Instead, the opposite almost exclusively applies. This refers to a pluralistic view of expertise as being context-specific and relationally determined (Gustafsson and Lidskog 2018; Gustafsson et al. 2019).

Taken together, the IPBES’ implicit institutional understanding of what expertise is and who is an expert combines both substantive and relational elements (Gustafsson and Lidskog 2018; Gustafsson et al. 2019). In addition, looking further into the objectives of the IPBES reveals that expertise is not exclusively portrayed as something that is produced in everyday practices of academia and research facilities and brought to the organization’s work. Expertise and the socialization of the next generation of experts are instead also understood as being created by other knowledge practices and by the IPBES itself. Unlike the IPCC, whose sole objective is to assess the current knowledge on climate change, the IPBES’ work programme includes four additional objectives: (i) to build capacity, (ii) to strengthen knowledge foundations, (iii) to support policy, and (iv) to work on communication and engagement (IPBES 2019a). Through these objectives, especially through the objective of capacity building, an additional understanding of expertise is visualized. Thus, the objective that the IPBES should build capacity for the science-policy interface on biodiversity and ecosystem services presupposes that expertise of importance to the IPBES is not only created through scientific, indigenous, and local knowledge practices. Instead, expertise also has to be created as part of the organization itself (IPBES 2018, 2019b; Gustafsson et al. 2019). The IPBES’ engagement in capacity building for the science-policy interface acknowledges that the process of intergovernmental knowledge assessments differs from the everyday practices of producing science, indigenous or local knowledge (IPBES 2017). The intergovernmental assessment creates an additional form of context-specific specialized knowledge that adds to the knowledge that has already been brought to the process from other knowledge contexts. Using the concepts of technical knowledge and experience-based situated knowledge helps explain this attempt to complement the specialized (technical) knowledge that the experts bring to the assessment process with specialized (experience-based situated) knowledge on how the IPBES should carry out its activities.

The IPBES has both worked to develop methodological guidance on how to manage existing expert knowledge when carrying out its activities (IPBES 2016, 2020) and developed a conceptual framework to guide how to synthesize different forms of knowledge systems and expertise throughout the assessment processes (Díaz et al. 2015a, 2015b, 2018; Dunkley et al. 2018). Knowing how to participate in an IPBES assessment involves taking hold of and making use of experience-based situated specialized knowledge created through the IPBES’ work processes. To take hold and make use of this expert knowledge is to be part of a community of practice that, through the creation of knowledge, negotiates right and wrong, establishes meaning, and creates an identity as an IPBES expert that allows the community’s members to develop as knowledge holders and experts.

IPBES’ creation of this type of situated expertise does not make them unique among intergovernmental organizations. In contrast, Weber (1947) and Miller (1970) remind us that both technical knowledge and experience-based situated knowledge are present in all types of organizations and are thus naturally also part of the IPCC. However, what makes the IPBES unique is that it explicitly acknowledges that it is important to engage in this type of capacity building to become a trustworthy expert organization. Whereas the IPCC has created methodological guidelines and scenarios without talking about them in terms of building capacity or creating expertise, the IPBES has acknowledged this work as a community of practice to build capacity in the form of experience-based situated (expert) knowledge (Gustafsson 2018; Gustafsson et al. 2020).

Becoming a member of the IPBES’ community of practice by acquiring its situated knowledge is important for all experts participating in the organization. However, the IPBES has chosen to give some actors more guidance on how to build this capacity than others. Most of the guidance is given to the early career researchers who are introduced to the organization by participating in the IPBES fellowship programme (Gustafsson 2018). As a participant in the IPBES fellowship programme, an early career researcher participates as a fellow and an in-house expert in one of the IPBES’ assessments. Throughout the assessment process, the fellows work alongside and on similar terms as senior experts in their roles as Coordinating Lead Author, Lead Author, or Contributing Authors. The IPBES fellows also participate in an annual fellowship workshop to expand their experience-based situated knowledge
(Gustafsson et al. 2020). The fellowship programme functions to create a growing critical mass of experts who are capable of acting in different forms of leadership roles within the IPBES (Gustafsson et al. 2019). The fellows’ socialization enables them to become formal and informal leaders that could contribute to focus and coordinate the IPBES work, as well as to enable learning by influencing and guiding actors on the periphery of the IPBES’ community of practice (cf. Lave and Wenger 1991; Wenger 2000). Thus, the role of a fellow is very different from the role of a Chapter Scientist. Whereas the Chapter Scientist holds the passive role of a not yet qualified visitor of the expert community, the fellow has an active role as a full and contributing member of the expert community.

When comparing the IPCC and the IPBES, it becomes evident how their objectives and organizational structures reflect different implicit institutional ideas of what relevant expertise is and how this has led to different choices in relation to the responsibility to create expertise and the next generation of experts. While the IPCC in their organizational arrangements has identified this responsibility as being located in the everyday practices of academia and research facilities, the IPBES has instead institutionally identified how they share the responsibility to create expertise with multiple different forms of knowledge practices. However, one question remains to be answered: what are the consequences if an intergovernmental expert organization takes on the responsibility of creating expertise and the next generation of experts, and what are the consequences if they do not? The concluding discussion of this paper will address this question.

5. Concluding discussion: creating communities, creating expertise

The analysis has shown how the IPCC and the IPBES have been structured as facilitators and coordinators of the epistemic communities of climate change and biodiversity loss by bringing together otherwise scattered and discursive expert communities and by concretizing these communities’ collective knowledge through common practices that regulate the methods for completing assessments. Thus, the two expert organizations also include communities of practice. However, the analysis has also shown that organizations differ in regard to the structural establishment and development of these communities of practice, as well as in their institutional understanding of their responsibility to produce knowledge and expertise. On the one hand, the IPCC has structurally located the responsibility to create new expertise and the next generation of experts within the everyday practices of academia and research facilities and has not formally focused on the development of its community of practice. On the other hand, the IPBES has structurally taken on this task as being a shared responsibility with other knowledge practices. By actively working on capacity building, especially among early career researchers who represent the next generation of experts, the IPBES has actively engaged in the development of a community of practice.

The epistemic communities and the communities of practice in each of the two expert organizations studied – the IPCC and the IPBES – are connected either directly or indirectly through knowledge overlaps. Thus, in these cases, we can see in practice the possibility that Creplet et al. (2001) have pointed out: that one form of community could evolve into the other. As the IPBES is explicitly working to grow and strengthen its community of practice, I argue that it is becoming increasingly likely that the IPBES will not only coordinate but also have an impact on the epistemic community on biodiversity and ecosystem services. By taking on the responsibility of creating new expertise and the next generation of experts, the IPBES enhances its likelihood of having a significant impact not only on policy but also on the epistemic community of biodiversity and ecosystem services. By actively engaging in creating expertise on how to understand environmental problems and their possible solutions and by contributing to the creation of a new generation of experts, the IPBES is moving towards becoming an important actor in the direct shaping of how we both understand and govern biodiversity and ecosystem services. Thus, the everyday practices of academia and research facilities are not the sole creators of expertise, the epistemic community is not the sole form of expert community, and the IPBES is not a mere facilitator or coordinator of existing knowledge.

Even though the IPCC does not formally engage in creating new knowledge and a new generation of experts, the theories on expertise tell us that bringing together experts in a common practice does have an impact on the production of (expert) knowledge beyond these practices, even though this impact may be unintentional. However, the extent to which and how the IPCC has had such an impact in the field of climate change and what the relations between the epistemic communities and the communities of practice in the IPBES look like remains surprisingly underexplored (cf. Corbera et al. 2016; Gustafsson and Berg 2020; Hughes and Paterson 2017; Hulme and Mahoney 2010; Pasgaard et al. 2015; Pearce et al. 2018). Instead, the IPCC’s impact on policy has been studied (e.g. Cash et al. 2002; Zehr 2005; Humphreys 2009; Hulme 2010; Hoppe and Wesselin 2014; Heink et al. 2015; Beck and Mahony 2018). Thus, one of the consequences of the IPCC not actively having acknowledged their
engagement in knowledge production is that the community of practice’s influence on the epistemic community on climate change risks being neglected and underestimated, both by the IPCC itself and by the research community. This risk is reflected in the lack of knowledge on how the IPCC’s experience-based situated knowledge serves to strengthen or weaken the logic and arguments of the epistemic community on climate change.

We know that within the organizational structures that have been studied in this paper, the organizations come to life through the actions of the participating experts (cf. Weber 1947; Miller 1970; Lave and Wenger 1991; Wenger 2000; Collins and Evans 2007). Communities of practice do not exist on paper but in practice. However, studies such as this one are important for bettering our understanding of the organizational preconditions within which these practices take place. For the community of practice to grow, structural preconditions that promote dynamic and constructive conversations are important (Díaz-Reviriego et al. 2019; Borie et al. 2020; Gustafsson and Berg 2020; Stevance et al. 2020). Thus, structures that also encourage experts to contribute their efforts to the production of the experience-based situated expert knowledge that makes the expert organization what it is. These experts are the link between the communities of practice and the epistemic communities. It is these experts that enable the codevelopment of the communities of practice and the epistemic communities, and that blur the external institutional boundaries of the IPCC and the IPBES, allowing expert organizations to contribute new (expert) knowledge to other knowledge practices.

This paper has shown how the IPCC and the IPBES, due to differences in their current organizational structures, play similar but different roles in developing expertise and creating the next generation of experts. Drawing on these findings, I argue for the importance of these organizations acknowledging the consequences of how these structural preconditions impact the wider creation of expertise and environmental governance. The otherwise taken-for-granted understandings of expertise need to be problematized to allow for reflexivity because these organizations do influence the creation of expertise and policy decisions outside their organizational boundaries, despite their intentions not to be policy prescriptive. This call for enhanced reflexivity does not come with a suggested ideal form of organizational structure or a general judgment concerning whether intergovernmental expert organizations that impact expertise and policy are good or bad. That is not the point of the argument. Instead, the argument calls for these organizations to acknowledge and reflexively embrace their epistemic power position. Intergovernmental expert organizations need to facilitate an ongoing reflexive and explicit discussion on how current and future organizational arrangements will constructively contribute to the creation of expertise, the next generation of experts, science-policy relations, and transformative change for a sustainable future. Finally, by analyzing the implications of the current organizational structures of the IPCC and the IPBES, it has also become clear that to fully understand expert organizations’ central roles in the creation of expertise and environmental governance, future research should explore the ongoing knowledge processes that are negotiated within these expert organizations. Let us do this next.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the Swedish Research Council Formas [2016-00545].

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References

Agrawala S. 1998a. Context and early origins of the intergovernmental panel on climate change. Clim Change. 39:605–620. doi:10.1023/A:1005315532386.
Agrawala S. 1998b. Structural and process history of the intergovernmental panel on climate change. Clim Change. 39:621–642. doi:10.1023/A:1005312331477.
Akrich M. 2010. From communities of practice to epistemic communities: health mobilizations on the internet. Sociol Res Online. 15(2):10. doi:10.5153/sro.2152.
Beck S. 2011. Moving beyond the linear model of expertise? IPCC and the test of adaptation. Reg Environ Change. 11 (2):297–306. doi:10.1007/s10113-010-0136-2.
Beck S, Borie M, Chilvers J, Esquerrà A, Heubach K, Humle M, Lidskog R, Lövbrand E, Marquard E, Miller C, et al. 2014. Towards a reflexive turn in the governance of global environmental expertise. The cases of the IPCC and the IPBES. GAIA-Ecol Perspect Sci Soc. 23(2):80–87. doi:10.14512/gaia.23.2.4.
Beck S, Mahony M. 2018. The IPCC and the new map of science and politics. WIREs Clim Change. 9(547):1’16. doi:10.1002/wcc.547.
Benn S, Edwards M, Angus-Leppan T. 2013. Organizational learning and the sustainability community of practice: the role of boundary objects. Organ Environ. 26(2):184–202. doi:10.1177/1086026613489559.
Biermann F. 2002. Institutions for scientific advice: global environmental assessments and their influence in developing countries. Global Governance. 8(2):195–219. doi:10.1163/19426720-00802007.
Borie M, Gustafsson KM, Obermeister N, Turnhout E, Bridgewater P. 2020. Institutionalising reflexivity?
Transformative learning and the intergovernmental science-policy platform on biodiversity and ecosystem services (IPBES). Environ Sci Policy. 110:71–76. doi:10.1016/j.envsci.2020.05.005.

Brooks TM, Lamoreux JF, Soberón J. 2014. Ipbes #Ipc. Trends Ecol Evol. 29(10):543–545. doi:10.1016/j.tree.2014.08.004.

Cash D, Clark W, Alcock F, Dickson N, Eckley N, Jäger J. 2002. Salience, credibility, legitimacy and boundaries: linking research, assessment and decision making: KSG working papers series RW02-046.

Collins HM, Evans R. 2007. Rethinking expertise. Chicago (IL): University of Chicago Press.

Corbera E, Calvet-Mir L, Hughes H, Paterson M. 2016. Patterns of authorship in the IPCC working group III report. Nat Clim Chang. 6(January):94–100. doi:10.1038/nclimate2782.

Creplet P, Dupouet O, Kern F, Mehrmapazir B, Munier F. 2001. Consultants and experts in management consulting firms. Res Policy. 30:1517–1535. doi:10.1016/S0044-7383(01)00165-2.

Diaz S, Demissew S, Joly C, Lonsdale WM, Larigauderie A. 2015b. A Rosetta stone for nature’s benefits to people. PLoS Biol. 13(1):e1002040. doi:10.1371/journal.pbio.1002040.

Diaz S, Demissew S, Lonsdale W, Lonsdale W, R. Adhikari J, R. Adhikari J, Adhikari JR, Arico S, Arico S, Bååd A. 2015a. The IPBES conceptual framework— connecting nature and people. Curr Opin Environ Sustainability. 14:1–16. doi:10.1016/j.cosust.2014.11.002.

Díaz-Revirrieo I, Turnhout E, Beck S. 2019. Participation an inclusiveness in the intergovernmental science-policy platform on biodiversity and ecosystem services. Nature Sustainability. 2:457–464. doi:10.1038/s41893-019-0290-6.

Dunkley R, Baker S, Constant N, Sanderson-Bellamy A. 2018. Enabling the IPBES conceptual framework to work across knowledge boundaries. Int Environ Agreements. 18:779–799. doi:10.1007/s10784-018-9415-z.

Gustafsson KM. 2018. Producing expertise. The intergovernmental science-policy platform on biodiversity & ecosystem services’ socialisation of young scholars. J Integr Environ Sci. 15(1):21–39. doi:10.1007/s19438-018-14395-09.

Gustafsson KM, Berg M. 2020. Early-career scientists in the intergovernmental panel on climate change. A moderate or radical path towards a deliberative future? Environ Sociol. 6(3):242–253. doi:10.1080/23251042.2020.1750094.

Gustafsson KM, Berg M, Lidskog R, Löfmark E. 2019. Intersectional boundary work in socializing new experts. The case of IPBES. Ecosyst People. 15(1):181–191. doi:10.1080/26395916.2019.1628105.

Gustafsson KM, Diaz-Revirrieo I, Turnhout E. 2020. Building capacity for the science-policy interface on biodiversity and ecosystem services: activities, fellows, outcomes, and neglected capacity building needs. Earth Syst Governance. 4:100050. doi:10.1016/j.esg.2020.100050.

Gustafsson KM, Lidskog R. 2018. Organizing international experts. IPBES’s efforts to gain epistemic authority. Environ Sociol. 4(4):445–456. doi:10.1080/23251042.2018.1463488.

Guston DH. 2000. Between politics and science. Assuring the integrity and productivity of research. Cambridge (UK): Cambridge University Press.

Haas PM. 1992. Introduction: epistemic communities and international policy coordination. Int Organ. 46(1):1–35. doi:10.1080/002081300011442.

Haas PM. 2001. Policy knowledge: epistemic communities. In: Smelser NJ, Baltes PB, editors. International encyclopedia of the social & behavioral sciences. Amsterdam: Elsevier; p. 11578–11586.

Haas PM, Stevens C. 2011. Organized science, usable knowledge and multilateral environmental governance. In: Lidskog R, Sundqvist G, editors. Governing the Air. Cambridge (MA): MIT Press; p. 125–161.

Heink U, Marquard E, Heubach K, Jax K, Hugel C, Nefhöver C, Neumann RM, Paulsch A, Tilch S, Timaeus J, et al. 2015. Conceptualizing credibility. Sci Publ Policy. 42(5):676–689.

Heubach K, Lambini CK. 2017. Distribution and selection of experts in the intergovernmental science-policy platform on biodiversity and ecosystem services (IPBES): the case of the regional assessment for Africa. Innovation. doi:10.1016/j.3511610.2017.1377601.

Ho-Lem C, Zeriffi H, Kandlikar M. 2011. Who participates in the intergovernmental panel on climate change and why: a quantitative assessment of the national representation of authors in the intergovernmental panel on climate change. Global Environ Change. 21(4):1308–1317. doi:10.1016/j.gloenvcha.2011.05.007.

Hoppe R, Wesselink A. 2014. Comparing the role of boundary organizations in the governance of climate change in the EU member states. Environ Sci Policy. 44:73–85. doi:10.1016/j.envsci.2014.07.002.

Hughes HR, Paterson M. 2017. Narrowing the climate field: the symbolic power of authors in the IPCC’s assessment of mitigation. Rev Policy Res. 34(6):744–765. doi:10.1111/rop.12255.

IPCC The Intergovernmental Panel on Climate Change. 2013a. Principles governing IPCC work.

IPCC The Intergovernmental Panel on Climate Change. 2013b. Appendix A to the principles governing IPCC Work. Procedures for the preparation, review, acceptance, adoption, approval and publication of IPCC reports.

IPCC The Intergovernmental Panel on Climate Change. 2015. “IPCC-XLI/Doc. 4. Future work of the IPCC. Consideration of the recommendations by the task group on future work of the IPCC.” Nairobi (Kenya). February 24–27.

IPBES Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services. 2016. Summary for policymakers of the methodological assessment report on scenarios and models of biodiversity and ecosystem services of the intergovernmental science-policy platform on biodiversity and ecosystem services. Ferrier S, Ninan KN, Leadley P, et al. (editors). Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, Bonn (Germany).

IPBES Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services. 2017. IPBES/5/15: report of the plenary of the intergovernmental science-policy platform on biodiversity and ecosystem services on the work of its fifth session. Bonn (Germany), 7–10 March: 2017.

IPBES Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services. 2018 18–24 March. IPBES/6/DIF/12: information on work related to capacity-building (deliverables 1 (a) and 1 (b)). Medellin (Colombia).

IPBES Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services. 2019a. IPBES/7/6: Ecosystems and People
next work programme of the Platform. Paris, 29 April–4 May: 2019.

[IPBES] Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services. 2019b. IPBES/7/ INF/18. Report on the review of the Platform at the end of its first work programme. Paris, 29 April–4 May: 2019.

[IPCC] The Intergovernmental Panel on Climate Change. 2020. About Scholarship program. Accessed 2020 Jan 14 https://www.ipcc.ch/about/scholarship/

[IPBES] Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services. Guidance for IPBES experts. Accessed Jun 26 2020 https://ipbes.net/guidance-ipbes-experts

Hulme M. 2010. Problems with making and governing global kinds of knowledge. Global Environ Change. 20:558–564. doi:10.1016/j.gloenvcha.2010.07.005.

Hulme M, Mahoney M. 2010. Climate change: what do we know about the IPCC? Prog Phys Geogr. 34(5):705–718. doi:10.1177/0309133310373719.

Humphreys D. 2009. Working across boundaries: science–policy interfaces and international forest politics. J Integr Environ Sci. 6(3):163–174. doi:10.1080/19438150309309483.

Irwin A, Wynne B. 1996. Misunderstanding science? The public reconstruction of science and technology. Cambridge: Cambridge University Press.

Koetz T, Farrell KN, Bridgewater P. 2012. Building better science-policy interfaces for international environmental governance: assessing potential within the intergovernmental platform for biodiversity and ecosystem services. Int Environ Agreements. 12:1–21.

Lave J, Wenger E. 1991. Situated learning. Legitimate peripheral participation. New York (NY): Cambridge University Press.

Lidskog R, Sundqvist G. 2018. Environmental Expertise. In: Boström M, Davidson D, editors. Environment and society. London: Palgrave. p. 167–186.

Lim M, Lynch AJ, Fernández-Llamazaes A, Balint L, Basheer Z, Chan I, Jaureguiberry P, Mohamed A, Mwampampa TH, Palomo I, et al. 2017. Early-career experts essential for planetary sustainability. Curr Opin Environ Sustainability. 29:151–157. doi:10.1016/j.cosust.2018.02.004.

Miller LP. 1970. Social-psychological implications of weber’s model of bureaucracy: relations among expertise, control, authority, and legitimacy. Soc Forces. 49 (1):91–102. doi:10.2307/2575742.

Montana J. 2017. Accommodating consensus and diversity in environmental knowledge production: achieving closure through typologies in IPBES. Environ Sci Policy. 68:20–27. doi:10.1016/j.envsci.2016.11.011.

Montana J, Borie M. 2016. IPBES and biodiversity expertise: regional, gender, and disciplinary balance in the composition of the interim and 2015 multidisciplinary expert panel. Conserv Lett. 9(2):128–142. doi:10.1111/conl.12192.

Obermeister N. 2017. From dichotomy to duality: addressing interdisciplinary epistemological barriers to inclusive knowledge governance in global environmental assessments. Environ Sci Policy. 68:80–86. doi:10.1016/j.envsci.2016.11.010.

Pasgaard M, Dalsgaard B, Maruyama PK, Sandel B, Strange N. 2015. Geographical imbalances and divides in the scientific production of climate change knowledge. Global Environ Change 35:279–288. doi:10.1016/j.gloenvcha.2015.09.018.

Pearce W, Mahony M, Raman S. 2018. Science advice for global challenges: learning from trade-offs in the IPCC. Environ Sci Policy. 80:125–131.

Schulte-UEbbing L, Hansen G, Macaspac Hernández A, Winter M. 2015. Chapter scientists in the IPCC AR5 – experiences and lessons learned. Curr Opin Environ Sustainability. 14:250–256.

Stevance A-S, Bridgewater P, Louafi S, King N, Beard TD, van Jaarsveld AS, Ofir Z, Kohsaka R, Jenderedijan K, Rosales Benítes M, et al. 2020. . The 2019 review of IPBES and future priorities: reaching beyond assessment to enhance policy impact. Ecosyst People. 16(1):70–77. doi:10.1080/26395916.2019.1702590.

[UNEP] United Nations Environment Programme. 2010. UNEP/IPBES/3/3: report of the third ad hoc intergovernmental and multi-stakeholder meeting on an intergovernmental science-policy platform on biodiversity and ecosystem services. Busan (Republic of Korea), 7–11 June: 2010.

Timpé M, Montana J, Reuter K, Borie M, Apkes J. 2018. Engaging diverse experts in a global environmental assessment: participation in the first work program of IPBES and opportunities for improvement. Inovation. 31 (S1):S15–S37.

Vadrot ABM. 2014. The politics of knowledge and global biodiversity. London: Routledge.

Vadrot ABM. 2020. Building authority and relevance in the early history of IPBES. Environ Sci Policy. 113:14–20. doi:10.1016/j.envsci.2020.06.006.

van der Veer L, Visser H, Petersen A, Janssen P. 2014. Innovating the IPCC review process – the potential of young talent. Clim Change. 125:137–148. doi:10.1007/s10584-014-1145-9.

Wagner A, Polak P, Świątkiewicz-Mosny M. 2019. Who defines- who decides? Theorising the epistemic communities, communities of practice and interest groups in the healthcare field: a discurscse approach. Soc Theory Health. 17:192–212. doi:10.1057/s41285-018-0073-6.

Weber M. 1947. The Theory of Social Economic Organization. New York (NY): Free Press.

Wenger E. 1998. Communities of practice. Learning, meaning, and identity. New York (NY): Cambridge University Press.

Wenger E. 2000. Communities of practice and social learning systems. Organization. 7(2):225–246. doi:10.1177/1350508400070002.

Zehr S. 2005. Comparative boundary work: US acid rain and global climate change policy deliberations. Sci Publ Policy. 32(6):445–456. doi:10.3152/147154305781779227.