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Correspondence to: Professor Tim Forsyth, Email: t.j.forsyth@lse.ac.uk

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Thematic Section: Biodiversity Revisited

Who gets to imagine transformative change? Participation and representation in biodiversity assessments

Silke Beck[1] and Tim Forsyth[2]

[1]Helmholtz Centre for Environmental Research, UFZ, Leipzig, Germany and [2]Department of International Development, London School of Economics and Political Science, London, UK

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has been mandated to assess transformative change in order to identify pathways for achieving the 2050 Vision for Biodiversity. Yet, the topic of transformative change raises significant new challenges for biodiversity assessments because it combines scientifically plausible projections about the drivers and trends of biodiversity loss with normative and collective visions of a sustainable world for nature and people. In this commentary, we argue that assessments of visions of a sustainable world should also ask 'whose values and visions count?' because different values and visions influence which voices and perspectives are considered relevant for generating scientific knowledge for transformative change. In particular, we argue that this situation requires rethinking modes of participation and co-production in assessments of transformative change: from consulting different groups as potential 'users' of assessments to seeing how visions of a sustainable world are represented through the selection of evidence and actors. In other words, assessments need to be less concerned about the inclusion and exclusion of actors, and more concerned about how these actors bring the perspectives of others with them.

What are transformation and co-production?

Much environmental assessment today adopts the task of assessing transformative change. According to IPBES's Global Assessment Report, "[G]oals for 2030 and beyond may only be achieved through transformative changes across economic, social, political and technological factors" (IPBES 2019). IPBES defines transformative change "as a fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values." The rationale underlying this assessment is to move away from current, relatively short-term incremental changes towards more holistic pathways reflecting revised paradigms, goals and values (Pelling et al. 2015).

Yet, how to identify revised pathways towards a transformed and sustainable world? IPBES understands its mandate as policy-relevant but not prescriptive (Stevance et al. 2020). One key way has been through scenario planning as a means of providing plausible descriptions of the potential future trajectories of a system (Heugens & van Oosterhout 2001, IPBES 2016), which can provide a more analytical approach to future targets than modelling alone (Pereira et al. 2019). Scenarios such as these can project and help implement transformative change (Raudsepp-Hearne et al. 2020).

IPBES has also endorsed knowledge co-production as a way to consult with policymakers and stakeholders simultaneously with assessment. (Knowledge co-production is in addition to the joint contribution by nature and anthropogenic assets in generating nature's contributions to people, which IPBES also calls co-production.) Knowledge co-production is intended to make scientific findings interactive and 'usable', such as by studying remote satellite sensing and meteorology and modelling simultaneously with the indigenous knowledge of Sami and Nenets reindeer herders to co-produce datasets (Lemos & Morehouse 2005, IPBES 2016). Indeed, IPBES has included a broader range of societal actors than other global assessments such as the Intergovernmental Panel on Climate Change (IPCC) (Timpte et al. 2018), although one evaluation concluded that IPBES could include indigenous and local knowledge more systematically (Díaz-Reviriego et al. 2019).

This interpretation of co-production, however, differs from pre-existing approaches from within the social sciences (Jasanoff 2004, Miller & Wyborn 2018). These approaches to co-production focus instead on the (often tacit) beliefs, assumptions and values that inspire research or that present different evidence or stakeholders as relevant. For example, what passes for 'good science' in climate change policy can vary according to whether analysts adopt a global systems understanding of greenhouse gas emissions versus a perspective based on social justice and development (Agarwal & Narain 1991, Miller 2004). Another example is how organizations such as the European Environment Agency generate and use evidence partly to demonstrate the

need for the kind of international authority offered by these organizations in comparison to national or other bureaucracies (Waterton & Wynne 2004).

This reflexive approach to co-production is different from the practical–procedural approach adopted by IPBES because it looks at the underlying (and often tacit) assumptions and worldviews that make evidence or consultations appear relevant. By so doing, it also claims to assess evidence more robustly and usefully because it allows for deliberation about conflicting values or visions of desirable futures that are represented by evidence (Beck et al. 2017, Eckersley 2017). Indeed, the reflexive approach to co-production argues that the design of a scientific enquiry is also the "design of a particular view of society" (Leach 2014).

Reflexive co-production, therefore, offers to overcome some of the challenges of assessing transformative change by fully acknowledging that visions of a sustainable world are deeply normative and political, and hence are legitimate objects of political debate and choice. The question 'whose vision counts?' is important because it also shows how visions influence evidence and who might be included in order to provide evidence (Andersson & Westholm 2019). In other words, who gets to imagine transformative change?

Biodiversity assessments and participation

Historic biodiversity assessments have illustrated both challenges and opportunities arising from different approaches to co-production. The Millennium Ecosystem Assessment (MA) – a form of biodiversity assessment – was a ground-breaking assessment of ecosystem changes at multiple scales. Yet, critics have questioned how this objective shaped its representation of minorities or indigenous knowledge. According to one of the assessors, the MA identified 'local' actors and concerns in a highly reductive way in order to provide convenient counterpoints to the MA's overriding framework arising from a global systems perspective. Accordingly, 'local' examples and stakeholders were selected in order to illustrate the assertions of the global systems framework adopted, rather than being used to reframe the framework or to rethink the objectives, benefits or means of managing biodiversity and ecosystem services (Filer 2009). Other critics have suggested that the push for a unitary scientific voice in the MA resulted in a situation in which local knowledge had to be translated into 'scientific language' in order to be mediated through the global, unitary categories (Brosius 2006). The MA stated in its introduction that the choice of scale is not politically neutral, because the selection may intentionally or unintentionally privilege some groups. Yet these kinds of statements say little about which underlying beliefs, assumptions and values might make these groups appear relevant or with agency.

Similarly, participatory processes often seek to include indigenous groups, yet indigeneity alone can hide differences within heterogeneous indigenous groups. Likewise, being defined as indigenous may be empowering for some actors, but may make others less visible (Forsyth & Sikor 2013). These concerns do not simply reflect the different approaches to research adopted by disciplines such as anthropology and biological science, but instead show the need to study the ways in which scientific assessments can be influenced by tacit visions that create conditions where people and problems are presented in reductive ways (Andersson & Keizer 2014).

It is widely agreed that IPBES has adopted a more iterative and critical approach to local engagement than the MA in its pursuit of a multi-scalar structure, with representatives of 'local' and 'indigenous' knowledge being invited into the process from the design phase (Turnhout et al. 2012, Larigauderie 2015, Beck et al. 2017). Yet, research has suggested that procedures for participation were negotiated under the premise of ideals of numerical balance from different world regions (Montana 2017). This procedural form of co-production might overlook differences in the scientific capacities of regions by conflating researcher citizenship with region-specific expertise, rather than acknowledging the global politics and trends in research funding and the geographical biases and locations of education institutions and knowledge flows (Kovács & Pataki 2016). Similarly, indigenous people and local communities are commonly portrayed as those stakeholders most impacted by biodiversity loss, yet their status in terms of being able to reshape the IPBES conceptual framework and IPBES rules of procedures remains limited.

Transforming assessments

How can assessments adopt the more reflexive approach to co-production? Analysts argue that this requires various steps to add to the planning and implementation of scenario-making, multi-stakeholder engagement and the scoping and objectives of assessments (Hulme et al. 2011).

First, there is a need to see the role of assessments in setting objectives, parameters and assumptions that drive policymaking and research. A new assessment on transformative change can therefore be a constitutional moment or an opportunity to rethink the very nature of an assessment of transformative change (Jasanoff 2003). It is therefore important to ask whether practical–procedural processes of co-production can include or represent diverse people and perspectives as intended, as well as to ask how far different visions and values drive the inclusion of selected people and perspectives (Borie et al. 2020). This is an important task for the scoping of assessments and for ongoing monitoring and evaluation.

Second, opportunities for co-production and participation can arise in more diverse and distributed ways. For example, distributed forms of engagement can include social movements, new technologies such as social media or other means of communication involving communities, neighbourhoods and networks (Brondizio et al. 2016). The objective of consulting with more devolved forms of engagement is not to bypass existing frameworks such as the 2050 Vision, but rather to reduce the risk of assessments becoming locked into pre-existing beliefs, assumptions and values. This can also help connect pathways to transformative change with local concerns such as the search for livelihoods, land rights and social identity.

Third, there is a need to become aware of how highly visible arguments about transformative change might reduce discussion by offering reduced options. For example, in recent debates, various scholars have argued that historic debates about biodiversity and ecosystem services (including the MA) have been "dominated by knowledge from the natural sciences and economics" (Díaz et al. 2018), influenced by market-based logics based on a commitment to neoliberal ideas (McAfee 2012, Turnhout et al. 2012) and accordingly that transformative change must devise alternative projections for social and economic organization (Pereira et al. 2019). Yet, both the representations of ecosystem services and the critiques of these representations are based on particular worldviews. Reflexive approaches to co-production would show how all perspectives are inspired by different visions and values, but also how reducing debate to two opposing views might also exclude visions from less vocal sources (Forsyth 2015, Andersson & Westholm 2019). This kind of analysis has been used,

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for example, to show how some proposals for social transition under the IPCC have used numerical models that project past developments into the future without considering how their assumptions might themselves transform under new conditions (Hulme et al. 2011, Beck & Mahony 2018).

Transformative change should not be seen as technically viable pathways of changing individual behaviour and social values to achieve already-defined objectives (such as the 2050 Vision for Biodiversity and its connections to the Sustainable Development Goals). Instead, it needs to be a democratizing process that includes opportunities to allow a broader range of actors (beyond formal experts) to reconsider how the rationale and scope of an assessment have been set and with whose influence. Rather than clinging to the optimistic idea that more co-production will automatically achieve greater impact and better outcomes, it is necessary to acknowledge that there will always be diverse views about inclusivity and appropriate representation (Chilvers & Kearnes 2016).

A more reflexive and inclusive approach to assessing transformative change implies worrying less about the inclusion and exclusion of actors within assessments and more about how their visions of a sustainable world are represented through the selection of evidence and actors. Asking who gets to imagine transformative change will allow an assessment of transformative change to consider visions and values simultaneously with the evidence brought to support them. Doing this will reduce the risk that assessing transformative change will close down rather than expand the diversity of pathways, and the actors and visions contributing to them (Markusson et al. 2020).

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