

**CORRESPONDENCE**

Transformative scenarios for biodiversity conservation and sustainability

Increasing evidence shows that fundamental societal changes are essential to halt biodiversity loss. We therefore optimistically support the paper by Otero et al. (2020), which assesses how international biodiversity and sustainability policies frame economic growth in their conservation goals. Otero et al. (2020) highlight the work of the former IPBES expert group (now task force) on Scenarios and Models¹, and we take this opportunity to clarify our objectives (as introduced in Rosa et al. 2017), which were partially misinterpreted in the article.

The work plan of our task force builds upon recommendations of the IPBES methodological assessment report on scenarios and models of nature and nature's contributions to people (Ferrier et al. 2016). Recognizing the urgent need to inform the 2019 IPBES Global Assessment, we first catalyzed the "BES-SIM" collaboration of 17 comparative modeling exercises of biodiversity and ecosystem services based on the SSP-RCP scenario framework (Kim et al., 2018). However, our longer term objective is to catalyze co-development of the next generation of nature-focused scenarios. Otero et al. (2020) mention our initial step on this pathway, where we utilized participatory approaches to co-design a suite of desirable futures for nature with a diverse subset of global stakeholders, including indigenous and local communities (Lundquist et al., 2017). These future visions were then used to catalyze the construction of the transformative Nature Futures Framework, a platform for scenario development that can provide for a diversity of human values and perspectives on nature and nature's contributions to people (Pereira et al., 2020).

Otero et al. (2020) misinterpret that this new scenarios framework is linked to the SSP-RCP scenario framework. Rather, the Nature Futures Framework is not limited to solely one "SSP0" as suggested by Otero et al. (2020). Instead, the Framework allows for the expression of multiple possible "positive" future pathways in terms of sustainability, as shown through the diversity of future visioning and scenario exercises that we have hosted with global and regional stakeholder groups (Pereira et al., 2020). Diverse economic pathways are just one component

that we are integrating within this new scenarios framework, which are underpinned by human relationships with nature. These intrinsic ("Nature for Nature"), instrumental ("Nature for Society"), and relational ("Nature as Culture") values for nature (see Supporting Information) influence how positive future visions vary across the diversity of local and regional, societal, cultural, technological, policy, and governance contexts.

In summary, we agree that a transformative scenarios framework is required that recognizes the diversity of human values and relationships with nature, and how nature contributes both directly and indirectly to good quality of life. Human relationships with nature are what motivate society to act to bend the curve of biodiversity loss. Our task force has initiated the development of a novel framework that can build upon these relationships to diversify the range of sustainable policy and management options. This framework will inform new targets and indicators of human and nature well-being for the post-2020 framework, and ultimately enable transformative change.

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AUTHORS' CONTRIBUTIONS

Concept and design: Members of the IPBES task force, as discussed at a task force working group meeting in May 2020. Drafting of the manuscript: Carolyn Lundquist. Critical review of manuscript: All task force members, coordinated by Carolyn Lundquist and Shizuka Hashimoto, co-chairs, and Machteld Schoolenberg, head of the Technical Support Unit of this IPBES task force.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

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¹<https://ipbes.net/scenarios-models>

ETHICS STATEMENT

The authors declare that human ethics approval was not needed for this study.

DATA ACCESSIBILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

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