



Rio Conventions Pavilion Monday, 19 November 2018

Day 3 at the Rio Conventions Pavilion focused on the theme of scenario planning to realize transformative change towards biodiversity outcomes. Sessions in the morning reflected on findings from future modelling exercises that look at the implications of climate change scenarios for biodiversity, as well as scenarios for “bending the curve” of biodiversity trends.

In the afternoon, participants debated the relevance of these analyses for operationalizing the 2050 vision, with a closing panel focusing on the Convention on Biological Diversity (CBD) post-2020 global biodiversity framework.

The event was co-organized by the Netherlands Environmental Assessment Agency (PBL), the International Institute for Applied Systems Analysis (IIASA), the Dutch Research Institute for Transitions (DRIFT), the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the National Institute of Water and Atmospheric Research (NIWA) and Université Paris-Sud.

Opening Session

Carolyn Lundquist, CSIRO, welcomed participants, noting the discussions would explore how scenario analysis can support the achievement of the objectives of the three Rio Conventions and help realize transformative change for biodiversity.

Lejo van der Heiden, Ministry of Agriculture, Nature and Food Quality, the Netherlands, highlighted some challenges related to agricultural transition and how scenarios and modelling can contribute towards a system of circular agriculture. He said future scenarios on environmental issues are a powerful tool to deliver a compelling narrative to make broad groups of stakeholders, the public and political leaders realize that action is needed.

Anne Larigauderie, Executive Secretary of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) gave an overview of IPBES work since 2014, including efforts to support the inclusion of biodiversity in the Intergovernmental Panel on Climate Change (IPCC) projections, as well as its involvement with other research groups and institutions, such as the CBD.

Derk Loorbach, Erasmus University Rotterdam, emphasized that transformative change for biodiversity is “inevitable,” stating that the only question is whether it would happen in a disruptive or manageable way. He stressed the importance of incorporating diverse perspectives into dialogue, for example through bringing together behavioral social scientists and natural scientists.

David Cooper, CBD, emphasized the need for greater engagement with the public and decision makers and drew attention to learning from transitions that happened in the past.



From L-R: **David Cooper**, Convention on Biological Diversity (CBD); **Lejo van der Heiden**, Ministry of Agriculture, Nature and Food Quality, the Netherlands; and **Derk Loorbach**, Dutch Research Institute for Transitions (DRIFT)



Carolyn Lundquist, University of Auckland

Shared-Socio Economic Pathways and Biodiversity

Introducing the session, Carolyn Lundquist, explained that panelists would present the outcomes of the analyses of shared socio-economic pathways (SSPs) for biodiversity and ecosystem services, noting the results were used in the Global Land Outlook of the UN Convention to Combat Desertification (UNCCD) as well as the IPBES regional and land degradation and restoration assessments. She further noted that the session would reflect on the implications for biodiversity in the IPCC's 1.5°C report.

Paul Leadley, Université Paris-Sud, discussed the contribution of SSPs in understanding the future of the earth. He emphasized that nature-based solutions can play a major role in climate mitigation and adaptation but their impact is much greater when combined with transformative changes in food and energy consumption and production.

Rob Alkemade, PBL, outlined the SSPs designed for the IPCC, their implications for biodiversity and ecosystem services and applications for the IPBES Global Assessment. He explained that the GLOBIO model addresses six drivers of



Piero Visconti, International Institute of Applied System Analysis (IIASA)

biodiversity loss (land use, climate, fragmentation, pollution, exploitation, infrastructure) and presented the Mean Species Abundance (MSA) scale of originally occurring species.

Piero Visconti, IIASA, presented the habitat trends for birds and mammals under contrasting global change scenarios. He explained the Species Habitat Indices, highlighted the costs of inaction in terms of loss of habitat and species if business as usual scenarios continue and gave examples for halting biodiversity loss.

During discussions, panelists noted that it is incumbent on the community gathered at COP 14 to fundamentally rethink scenarios at multiple scales. It was also pointed out that the IPCC 1.5°C report, which addressed biodiversity loss, is demonstrative of the growing trend towards looking at the interlinkages among climate change, desertification and biodiversity loss.

Bending the Curve of 21st Century Biodiversity Trends

Opening the session, Carolyn Lundquist said the discussions would explore how scenario analysis can support the achievement of the objectives of the CBD, UNFCCC and UNCCD. It would also look at the development of the new strategic plan and how can it contribute to realizing transformative change for biodiversity.

Rob Alkemade, PBL, noted that to achieve the global target to halt biodiversity loss by 2050, the following drivers will need to be considered: large-scale and technologically optimal solutions at global level with a high level of international coordination; decentralized solutions for local energy production; agriculture that is interwoven with natural corridors; and national policies that regulate equitable access to food. He also pointed to the need to change consumption patterns by limiting meat intake, reducing waste in the agricultural production chain, and pursuing a less energy-intensive lifestyle.

David Leclère, IIASA, highlighted the need for ambitious but well-coordinated actions and the importance of combining current knowledge from the land-use and biodiversity



Paul Leadley, Université Paris-Sud



Jonathan Ekstrom, Biodiversity Consultancy

modelling communities. He illustrated scenarios for exploring the space for actions and said increased conservation efforts are key, as well as tackling the drivers of habitat degradation is equally important.

Piero Visconti, IIASA, outlined some pathways to achieve SDGs for terrestrial biodiversity and food security. He shared information on how to make enough space for nature and ensure food security, and reflected on how much should be protected based on frameworks such as the CBD Aichi Targets, and the “Half-Earth” and “Whole-Earth” proposals.

Scenario Insights for Operationalizing the 2050 Vision

Introducing the roundtable discussion, Marcel Kok, PBL, said the objective was to move from scenarios and models towards concrete targets for operationalizing the transformative change agenda. He stressed that the “solution space” is shrinking and asked panelists to offer ideas on what is needed to bend the curve.

Guido Broekhoven, Worldwide Fund for Nature (WWF) said that scenario building supports the transformative change agenda by providing an empowering narrative. He contrasted this to the “communication challenge” facing the Aichi Targets, underscoring the need to identify actors who can drive the process forward by translating the scenarios into policy and action, especially at the national level.



Mark Rounsevell, University of Edinburgh



David Leclère, International Institute of Applied System Analysis (IIASA)

Jonathan Ekstrom, The Biodiversity Consultancy, reflected on how apex targets, such as the 2°C climate change limit, helped the private sector to establish science-based targets, observing that a similar goal for biodiversity would be embraced by business as it would send a positive message that they can contribute to saving nature. He noted, however, that for science-based targets to work, there is need for a clear objective and metric, noting that scenario analyses could help companies to develop their individual targets using methods analogous to those used for climate.

Carolina Soto-Nararro, UN Environment Programme-World Conservation Monitoring Centre (UNEP-WCMC), discussed a new initiative exploring a composite index for biodiversity, aligned to the 2030 Agenda and other global goals.

Piero Visconti, IIASA, discussed some next steps in the biodiversity transition, noting that after scenario setting, there is need for agenda setting, and stress tests to explore different policy options. He invited participants to propose variables that might be incorporated in such tests.

David Leclère, IIASA, called for greater ambition, and highlighted diversified diets and ecosystem services as examples of broader targets that can help align biodiversity with other goals.

During the discussions, panelists debated the pros and cons of an apex target for biodiversity. Some felt that the climate target is largely “political,” while others noted its mobilization power. Others expressed alternative views, such as calling for a focus on decentralized, or aspirational and society-driven targets. While one speaker posed the question: “how do we operationalize the goal of living in harmony with nature?” another participant remarked that CBD is “the odd one out” in not having a unifying target and cautioned against letting the perfect become the enemy of the good.

Underscoring that the issue with the Aichi Targets was the lack of implementation, several speakers noted the importance of ensuring that the next CBD strategic plan links target-setting to indicators that are outcome based and measurable.

Interdisciplinary Scientific Support for Sustainability Transitions to Bend the Curve of Biodiversity Loss

Derk Loorbach, Erasmus University Rotterdam, introduced the session, noting it would focus on mobilizing knowledge from different scientific and practice-based perspectives to explore approaches to support developing transformative networks at the local level.

Mark Rounsevell, University of Edinburgh, stated that 25% of the terrestrial area in the EU is in protected areas – representing more than the Aichi Targets – yet there is massive biodiversity decline. He added this is indicative that the desired outcomes are not being achieved and something needs to change.

Fiona Kinniburgh, Institute for Sustainable Development and International Relations (IDDRI), noted that there are coordination challenges between different ministries, such as ministries of environment and agriculture, and other key actors. She added that some still feel that they must make a choice between keeping jobs or safeguarding the environment.

In the ensuing discussions, speakers reflected on the role of diets and consumer food preferences, as well the need of governance of food waste in sustainability transitions. Participants also shared experiences on how some governments are adopting initiatives that engage with entrepreneurs, scientists and local communities. One participant highlighted that looking to ancestral diets can contribute to diet adaptation.

CBD Post-2020 and Connections to the UNCCD, UNFCCC and SDG Agenda

Carolyn Lundquist introduced this closing panel, asking panelists to reflect on how the day's discussions can contribute to the further development of the transformative change agenda for biodiversity and the post-2020 global biodiversity framework. She also invited proposals on how scenario analysis can strengthen the link between science-policy platforms of the three Rio Conventions to support more coherent policy agendas, as well as the realization of the SDGs.

Thomas Brooks, International Union for Conservation of Nature (IUCN), emphasized that biodiversity needs the equivalent of the Paris Agreement and the scenarios and modelling discussed had helped inform how these types of targets can be set. He also pointed out that many countries will make the goal of biodiversity stabilization by 2050 a challenge,



Fiona Kinniburgh, Institute for Sustainable Development and International Relations (IDDRI)

but at the same time there are many other actors such as cities, private sector, indigenous groups and sub-national authorities who are prepared to be supportive in reaching these targets.

Bernadette Fischler, WWF, recalled the often-asked question of whether there is enough room on the planet to meet the needs of climate adaptation, biodiversity conservation and food security, adding that this is possible if we substantially change the way we produce and consume food. She called for an integrated approach to addressing plans for climate, biodiversity and development, since “life does not happen in silos.”

Mark Rounsevell, University of Edinburgh described the key role of diets and consumer food preferences, as well as the need of governance of food waste for sustainability transitions. He underlined the importance of “bending the curve,” citing the index on the Human Appropriation of Land for Food (HALF) around the world as an example of this.

Sylvia Karlsson-Vinkhuyzen, Wageningen University, shared her experiences with multi-level governance, drawing attention to the institutional design of the Paris Agreement and explaining that it follows a regular process of reflection. She concluded that for assessment of scenarios and models to be reflective it should be participatory and consider motivational drivers for greater involvement.



From L-R: **Thomas Brooks**, International Union for Conservation of Nature (IUCN); **Bernadette Fischler**, WWF; **Sylvia Karlsson-Vinkhuyzen**, Wageningen University; and **Derk Loorbach**, DRIFT