

Initial scoping report for deliverable 1 (a): Assessing the interlinkages among biodiversity, water, food and health (thematic assessment)

Note: This initial scoping report, which was developed to inform the Plenary at IPBES 7, would be considered for the development of the scoping report in the context of the new IPBES rolling work programme up to 2030 adopted by the Plenary in decision IPBES-7/1.

1. There are strong interlinkages among the globally agreed goals of food and water security, health for all, protecting biodiversity on land and in the oceans and combating climate change, among others. In fact, the Sustainable Development Goals are regarded as “integrated and indivisible”, balancing the economic, social and environmental dimensions of sustainable development. Similarly, the objectives of the Rio Conventions (Convention on Biological Diversity, United Nations Framework Convention on Climate Change and United Nations Convention to Combat Desertification) are seen as interlinked.
2. Interlinkages take various forms, including synergies, co-benefits and trade-offs. For example, while biodiversity and nature’s contributions to people are fundamental to supporting food production, providing clean water and ensuring good health, the way we produce our food has an impact on biodiversity and water quality, as well as climate change. The food system is also a major determinant of health, as is the way we manage ecosystems more broadly. Moreover, biodiversity loss and climate change each affect our ability to produce nutritious food, supply clean water and ensure healthy lives for all. Thus, there is a web of dependence, impact and common drivers of change.
3. The challenge is to achieve good health for all with food and water security, including through the enhanced use of biodiversity, without adversely impacting biodiversity, water quality or climate and in the context of global change, including climate change.
4. The assessment will cover:
 - (a) The interlinkages among the health of people, crops, livestock, soil, wildlife and the environment in general (including through the One Health approach and related concepts);
 - (b) The interlinkages between food production and biodiversity (within and outside production systems), including with respect to the control of pests and diseases, pollination¹ and nutrient cycling;
 - (c) The interlinkages among fertilizers, crop nutrition and productivity, water quality, biodiversity (in terrestrial, freshwater and marine systems) and greenhouse gas emissions;
 - (d) The interlinkages among dietary diversity, health and the diversity of crops, livestock and other components of biodiversity in agricultural ecosystems;
 - (e) The significance of marine biodiversity for human health, including for food security, and the consequences of multiple stressors on marine ecosystems (including pathogens, chemicals, climate change and habitat degradation);
 - (f) The linkages between the composition and diversity of the human microbiome and biodiversity in the environment, and implications for the planning, design, development and management of human settlements;
 - (g) The contribution of biodiversity and the natural environment in promoting mental and physical health, particularly in urban areas;
 - (h) The relationships among biodiversity, ecosystem degradation and infectious disease emergence, including the effects of ecological community structure and composition, habitat disturbance and human-wildlife contact, and the implications for land use and ecosystem management;
 - (i) The ways in which projected changes in climate will affect biodiversity and projected biodiversity losses will affect climate;²

¹ Drawing on the IPBES assessment of pollinators, pollination and food production.

² Drawing on the joint technical paper on biodiversity and climate change (deliverable 1 (b)).

(j) Interlinkages between climate mitigation and adaptation strategies, including ecosystem-based approaches (reduced ecosystem loss and degradation, ecosystem restoration and sustainable management of land, soils, livestock and crops), and how other proposed climate mitigation strategies (including land-based strategies such as large-scale afforestation and bio-energy) could affect biodiversity;²⁸

(k) The ways in which projected changes in climate and biodiversity loss will affect agricultural production, water resources and human health.²⁸

5. The issues listed above will be examined, inter alia, through a nexus approach (i.e., considering interactions among the issues, goals and sectors).
6. The assessment will require interdisciplinary and transdisciplinary work that draws on the natural and social sciences and indigenous and local knowledge, and will engage experts across multiple disciplines and holders of indigenous and local knowledge. It will examine relevant frameworks and approaches such as the ecosystem, One Health and landscape approaches.
7. While the assessment will be global in scope, regional differences and similarities will also be assessed.
8. The assessment will focus on producing the information needed to achieve the policy objectives of the Sustainable Development Goals, the Paris Agreement and the post-2020 biodiversity framework. It will be most directly relevant to Sustainable Development Goals 2 (zero hunger, i.e., issues of food security), 3 (good health and well-being), 6 (clean water, i.e., issues of water security), 13 (climate action), 14 (life below water) and 15 (life on land).
9. The assessment will also be relevant to Sustainable Development Goals 1 (poverty in its broadest definition), 4 (education, i.e., issues such as awareness-building), 5 (gender equality, i.e., issues such as the role of women in farming), 8 (decent work and economic growth, i.e., issues such as the implications for livelihoods), 10 (reduced inequalities, i.e., issues such as the distributional implications of climate change, loss of biodiversity, food and water security and access to health infrastructure), 11 (sustainable cities and communities, i.e., green spaces), 12 (sustainable consumption and production, i.e., issues such as sustainable agriculture and food waste), 16 (peace, justice and strong institutions, i.e., issues such as the implications of lack of access to food and clean water for local and regional peace) and 17 (partnerships for the goals, i.e., issues such as polycentric governance and cross-sectoral policies).
10. The assessment will build on and complement previous and ongoing work by IPBES (pollination assessment, land degradation and restoration assessment and the regional and global assessments of biodiversity and ecosystem services), IPCC (Fifth Assessment Report, special reports on the impacts of global warming of 1.5°C and on climate change and land) and other international bodies (e.g., The State of the World's Biodiversity for Food and Agriculture and related reports on genetic resources from the Food and Agriculture Organization of the United Nations, the International Assessment of Agricultural Knowledge, Science and Technology for Development, relevant reports of The Economics of Ecosystems and Biodiversity (TEEB), the Rockefeller Foundation–Lancet Commission on Planetary Health, the International Panel of Experts on Sustainable Food Systems). The detailed scoping process would determine what has been and is being assessed, to ensure that the proposed assessment will add value and to identify the issues on which the Plenary would want the assessment to focus.
11. The assessment, while challenging, is deemed feasible by the Multidisciplinary Expert Panel and the Bureau. New scenarios will be required, as they were for the IPCC special report on the impacts of global warming of 1.5°C.
12. The assessment will extend over a four-year period.