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Item 6 of the provisional agenda*
Capacity-building and development and technical and scientific cooperation

Overview of the technological, technical and institutional capacity gaps of Parties**

Note by the Secretariat

I. Background

1. In paragraph 6 of decision 16/3, the Informal Advisory Group on Technical and Scientific Cooperation was invited to provide advice on suitable options to further address the technological, technical and institutional capacity gaps identified, with a focus on the targets and cross-cutting considerations of the Kunming-Montreal Global Biodiversity Framework.

2. The most recent set of records related to capacity needs have been captured in the national targets and revised national biodiversity strategies and action plans submitted by Parties through the online reporting tool. A complete analysis of the national targets submitted by Parties, which includes the capacity needs for each target of the Framework is presented in document CBD/SBI/6/INF/5. There are also other recent assessments and analyses related to biodiversity capacity needs that have been carried out. A few examples of these are presented in the Annex to this document.

II. Summary of findings

3. The general observations and the main capacity gaps identified across the targets, as presented in document CBD/SBI/6/INF/5, include the following:

1. Data and knowledge gaps are persistent

4. Across nearly all targets, Parties report insufficient baseline data, fragmented databases, limited interoperability, modelling for different biodiversity scenarios and incorporating future climate scenarios.

5. Major weaknesses include the lack of standardized methods; understudied species or ecosystems (especially marine, freshwater and fragile ecosystems); challenges identifying areas of high ecological or biodiversity importance; and limited integration of indigenous and local knowledge.

* CBD/SBI/6/1.
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6. Without strong data systems and monitoring and common platforms to share data, measuring progress and implementing effective policy remains a challenge.

2. Technology needs are widespread but uneven across the targets

7. There is high demand for geographic information systems, remote sensing, drones, artificial intelligence-machine learning, bioacoustics, environmental DNA, genetic sequencing and cloud-based data systems.

8. Many countries lack infrastructure, laboratories, Internet access and processing capacity to deploy these tools. Technology adoption is fragmented and heterogeneous, some countries have basic laboratory needs, while others seek cutting-edge artificial intelligence-based applications.

9. While technology and knowledge-sharing offer transformative opportunities, without institutional reforms and equity measures, progress will remain uneven.

3. Capacity-building was mentioned almost universally

10. Many countries mentioned that they lacked capacity; though, only a few provided specific details on the type of capacity needed. This suggests that the information shared is being used as a proxy for unarticulated gaps, highlighting the need for structured capacity assessment and analysis and the need to adopt integrated long-term capacity development strategies and initiatives, including upskilling the workforce, providing specialized technical training (for example, artificial intelligence-based monitoring, invasive species control) and institutional strengthening rather than one-off projects.

11. Institutional limitations were mentioned as hindering implementation with Parties frequently citing inadequate governance, fragmented responsibilities, corruption and lack of political will. Specific challenges include the overlapping or unclear mandates across ministries; poor enforcement of existing regulations; and limited cross-sector coordination (for example, agriculture, fisheries, energy and trade sectors). Solutions repeatedly emphasize a whole-of-government and whole-of-society approach with stronger legal frameworks and participatory governance that include indigenous peoples and local communities.

4. Inclusion and cooperation are essential at all levels for all the targets

12. Gender-responsive approaches, access to justice, and the recognition of knowledge and rights of indigenous peoples and local communities are repeatedly flagged as critical enablers. Some of the recurrent gaps include the underrepresentation of women; barriers to participation faced by marginalized groups; and the use of traditional knowledge without fair benefit-sharing.

13. International cooperation is also mentioned as a key enabler, especially for invasive species management, restoration, biosafety, trade control, and resource mobilization. National and local cooperation is also vital for inter-agency coordination, knowledge-sharing, and involvement of indigenous peoples and local communities. Regional and global cooperation mechanisms, such as the technical and scientific cooperation mechanism,[1] could be critical to pooling resources, standardizing methods, and accelerating action and progress at the national and regional levels.

III. Conclusions

14. Parties to the Convention on Biological Diversity expressed a wide range of technical, technological and institutional capacity needs and indicated that additional means of implementation are required to meet their national targets.

15. Though limited information on means of implementation was provided in the submissions uploaded by Parties through the online reporting tool, financial and human resources, capacity-building, awareness-raising, transfer of technology and scientific research were commonly

[1] www.cbd.int/tsc/tscm.

mentioned in the national targets. Some countries indicated that increased means of implementation were required, in particular for national targets associated with Targets 17, 22 and 23 of the Framework. By comparison, fewer countries reported that additional means of implementation were needed for their national targets related to Targets 12, 15 and 21.

16. In the national target template, Parties are requested to provide information on their capacity needs; however, only one third of Parties that have submitted national targets and national biodiversity strategies and action plans to date have included details on their needs related to capacity and other means of implementation. It is also expected that in their seventh national reports Parties will provide a summary assessment of the available means of implementation and the challenges or specific obstacles affecting the implementation of the Convention and the Framework in terms of capacity, technical, technological, institutional and financial gaps and constraints.

17. In addition, a more comprehensive gap analysis based on the seventh national reports will be included in the global report on collective progress in the implementation of the Framework. A dedicated chapter of the global report will focus on the provision of means of implementation. The quality of this analysis will be dependent on the detailed information related to the technological, technical and institutional capacity needs provided by Parties.

18. Currently, the subregional technical and scientific cooperation support centres[2] of the technical and scientific cooperation mechanism are engaging with Parties to determine their capacity needs and priorities. The reports of the regional and subregional dialogues organized by the Secretariat in collaboration with partners, summarized in document CBD/SBI/6/INF/6, have also included discussions related to the capacity needs. In addition, various needs assessment surveys have been carried out by partners, such as the United Nations Environment Programme, the United Nations Development Programme and the Food and Agriculture Organization of the United Nations, in collaboration with the Secretariat, to capture the capacity needs of Parties. This information may also provide useful insights into specific capacity needs within national contexts.

[2] www.cbd.int/tsc/tscm/subregionalcentres.

Annex

Examples of recent assessments and analyses related to biodiversity capacity gaps

A global community-sourced assessment of the state of conservation technology. Speaker, T., O'Donnell, S., Wittemyer, G., et al. Conservation Biology,2021(https://doi.org/10.1111/cobi.13871).

Amazon Assessment Report 2025: Connectivity of the Amazon for a living planet. Science Panel for the Amazon, 2025 (https://www.unsdsn.org/resources/2025-amazon-assessment-report/).

Challenges for small island developing states in meeting monitoring requirements of the Kunming-Montreal Global Biodiversity Framework. Jarvis, A., Jeffery Brown, H., Dias, A., et al. (2025), EcoEvoRxiv, https://ecoevorxiv.org/repository/view/10072/).

Global capacity needs assessment: Key gaps and capacity priorities for restoration to support the United Nations Decade on Ecosystem Restoration 2021-2030. FAO 2021, https://openknowledge.fao.org/handle/20.500.14283/cb8019en).

Ocean Decade Vision 2030 White Papers – Challenge 7: Sustainably Expand the Global Ocean Observing System. Miloslavich, P., O'Callaghan, J., Heslop, E., et al. (2024). UNESCO-IOC (https://doi.org/10.25607/brxb-kr45).

Results of the Rapid Capacity Needs Assessment (RCNA). NBSAP Accelerator Partnership (2024).

Scientific and technical needs to support the implementation of the Kunming-Montreal Global Biodiversity Framework: Review and analysis of existing tools and guidance and their gaps to support the implementation of the targets of the Kunming-Montreal Global Biodiversity Framework. Secretariat of the Convention of Biological Diversity, 2024 (CBD/SBSTTA/26/3 and CBD/SBSTTA/26/INF/15).

Thematic assessment report on invasive alien species and their control. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES 2023, https://www.ipbes.net/ias).

The State of Conservation Technology 2023: Three-year trends report. WILDLABS: Conservation Technology Network, 2023.

2024 Annual Report. WILDLABS: Conservation Technology Network, 2024.

Report setting out the capacity needs to deliver scientific and technical cooperation. Wilkerson, B., Ventocilla, J. L., Öllerer, K., Vasilijevic, M. Cooperation for the Convention on Biological Diversity (COOP4CBD) 2024.