

How do Parties report to the Convention on Biological Diversity on genetic diversity and how can reporting and monitoring be improved?

BACKGROUND

- **Biodiversity is facing** a wide range of pressures, including habitat degradation, climate change, pollution, and fast-spreading pathogens. *Genetic diversity* - the variation within a species - plays a central role in a population's ability to adapt and persist in response to a changing environment. Genetic diversity is one of three levels of biodiversity recognized by the Convention on Biological Diversity (CBD), and other national and international conservation policies.
- **However, estimates of** the status and trends of genetic diversity are not yet routinely integrated into conservation programmes or biodiversity targets. This can be partly explained by the technical nature of genetic approaches, and the disconnect between genetics research and conservation practitioners. Furthermore, the lack of reliable indicators is recognised as a key data gap for the post-2020 biodiversity framework.
- **To better understand** how CBD signatory Parties assess and protect genetic diversity, we conducted a thorough review of 114 5th and 6th National Reports to determine how countries reported actions, uses, threats, trends, and priority species for genetic diversity monitoring and conservation.

RECOMMENDATIONS

Our recommendations to the CBD Secretariat and Parties aim to enhance monitoring and protection of genetic diversity for long-term persistence of populations and healthy ecosystems, fulfilling the core goal of the CBD.

1 Increase awareness and knowledge of the central role of genetic diversity in biodiversity, protect and document Indigenous and local knowledge, and build capacity among conservation practitioners to monitor and manage genetic diversity.

2 Develop and implement standardized guidance for routine genetic management, long-term monitoring, and reporting of the genetic diversity status, threats, actions, and trends for wild and socioeconomically important species.

3 Implement improved genetic diversity-focused targets and indicators ([Hoban et al. 2020](#)) for the post-2020 CBD framework to enable monitoring of genetic diversity trends and progress towards these targets.

4 Amend the CBD National Reports templates and provide guidance and resources to encourage and enable consistent and clear reporting on in-situ and ex-situ genetic diversity monitoring in wild and socioeconomically important species.

The full report with detailed recommendations may be found at: [Hoban et al. 2020](#). An analysis of genetic diversity actions, indicators and targets in 114 National Reports to the Convention on Biological Diversity. ([preprint](#))

KEY FINDINGS

- Although most countries recognize the importance of genetic diversity, 21% of 6th National Reports did not refer to a genetic diversity target.
- Only 5% of countries reported indicators based on genetic studies or protection of Indigenous and local knowledge of genetic diversity.
- Actions to conserve genetic diversity primarily focused on agricultural species (cultivated crops, farm animals, and crop wild relatives) rather than wild species.
- The top three genetic diversity indicators reported by countries included the number of genetic resources in conservation facilities, the number of plant genetic resources known/surveyed, and Red List status. However, these indicators do not reliably measure genetic erosion.
- Overall, the limited attention to monitoring genetic diversity, particularly in non-economically important species, is impeding the capacity to globally assess genetic diversity change over time.

FUTURE DIRECTIONS

The CBD and signatory Parties have an opportunity to ensure genetic diversity targets are effectively implemented to improve biodiversity conservation. The GEO BON Genetic Composition Working Group, and partners, are able to provide continued expertise to the CBD and Parties as they develop and implement targets to monitor and protect genetic diversity.

Prepared by Group on Earth Observations Biodiversity Observation Network (GEO BON) Genetic Composition Working Group for persons interested in the post-2020 strategy.

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