Citizen scientists setting up camera traps in North Macedonia / Eko-Svest

Citizen Science and the Global Biodiversity Framework

Prepared by the IUCN Commission on Education and Communication Citizen Science Task Force

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Mapping critical habitats for the shoebill in the Awoja-Agu wetland, Uganda / Terra-NatureWILD Conservation

Citizen scientists recording bird observations in Bengaluru, India / The Naturalist School

Advancing the GBF Through Citizen Science

According to the International Union for Conservation of Nature (IUCN), citizen science refers to the participation of the public in scientific research to generate data and knowledge, encompassing activities ranging from data collection to project co-creation and results interpretation. Highlighting its contribution to conservation, IUCN World Conservation Congress Resolution 125 (2025), *Advancing Citizen Science to Support and Democratize Conservation*, calls for its broader integration into conservation policies and practices.

The Kunming-Montreal Global Biodiversity Framework (GBF), adopted at the fifteenth Conference of the Parties to the Convention on Biological Diversity (CBD), sets out four goals for 2050 and 23 targets for 2030. It provides a key entry point for integrating citizen science into global biodiversity governance. The GBF Monitoring Framework explicitly invites Parties and relevant organisations to support citizen science and community-based monitoring and information systems.

These approaches can strengthen biodiversity monitoring, address data gaps, improve access to knowledge and support progress tracking, while engaging diverse actors in knowledge generation and decision-making.

Beyond data collection, citizen science can advance the GBF's emphasis on diverse knowledge systems, inclusive participation, capacity-building and societal engagement. Its contribution depends on effective integration into national biodiversity planning, monitoring and reporting processes.

Several GBF targets offer opportunities for such contributions, particularly through their emphasis on participation, knowledge generation and capacity-building, as outlined ahead.

	Target	Citizen Science Support
1	Plan and Manage all Areas To Reduce Biodiversity Loss	Citizen scientists can map land-use change, document high-value habitats and contribute local ecological knowledge to participatory spatial planning. Platforms such as iNaturalist and eBird can help identify biodiversity hotspots.
2	Restore 30% of all Degraded Ecosystems by 2030	Citizen scientists can monitor restoration sites before, during and after interventions, tracking vegetation recovery, species return and invasive species presence. Community tree-planting and habitat restoration programmes can generate ground-truth data at scale.
3	Conserve 30% of Land, Waters and Seas by 2030	Community rangers, Indigenous monitors and volunteer survey networks can provide species occurrence data to support the identification and monitoring of Protected and Conserved Areas, including OECMs, particularly in data-poor regions.
4	Halt Species Extinction, Protect Genetic Diversity, Manage Human-Wildlife Conflicts	Citizen science platforms can generate species occurrence records for biodiversity datasets, while volunteer monitoring can supplement regular population surveys for threatened species where public agencies lack the capacity to conduct them.
5	Sustainable, Safe and Legal Harvesting and Trade of Wild Species	Citizens can report illegal wildlife trade and unsustainable harvesting. Fishing communities can contribute to participatory stock assessments that inform sustainable fisheries management.
6	Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact	Citizen scientists can act as early detectors of invasive alien species by reporting new occurrences. Initiatives linked to early-warning systems can help identify emerging threats and enable timely responses before invasive species become widespread.
19	Resource Mobilization	Capacity-building, technology transfer and knowledge sharing can strengthen the infrastructure and skills needed for citizen science, including data collection, biodiversity monitoring and research.
21	Ensure That Knowledge Is Available and Accessible To Guide Biodiversity Action	Citizen science can generate and share biodiversity data with decision-makers and the public, complementing scientific, Indigenous and local knowledge to inform biodiversity action.
22	Participation in Decision-Making and Access to Justice and Information	Citizen science can create opportunities for Indigenous Peoples and local communities to participate in biodiversity knowledge production and governance, supporting more inclusive decision-making processes.
23	Gender Equality and a Gender-Responsive Approach for Action	Citizen science can broaden participation in biodiversity governance via opportunities for women, youth and underrepresented groups to contribute to monitoring, knowledge generation and decision-making.

Citizen scientist supporting water quality testing / Jüber Ahmed Sahel

Key Takeaways

These targets show that citizen science is embedded within the GBF as part of broader participatory and plural knowledge systems.

The GBF Monitoring Framework encourages citizen science and community-based monitoring to strengthen biodiversity information and decision-making. Additionally, analyses suggest that around 30% of GBF indicators could involve citizens in both data collection and analysis, while more than half could benefit from citizen contributions to data collection.

Realising this potential requires enabling institutional, technical and policy frameworks, including through National Biodiversity Strategies and Action Plans (NBSAPs). Priorities include strengthening data systems, quality assurance and validation, national capacities, and pathways for citizen-generated data to inform monitoring, reporting and decision-making.

Beyond addressing biodiversity data gaps at scale, citizen science can foster knowledge co-production, broaden public participation and strengthen societal ownership of biodiversity action, supporting the implementation of the GBF.

Further Reading on Citizen Science and the GBF

- IUCN Citizen Science Explainer Brief
- Involving citizens in monitoring the Kunming–Montreal Global Biodiversity Framework
- The use of citizen science data for biodiversity monitoring and informing the GBF indicators

Key Contributors: *Nathalie Morata, Austin Mast, Alison Ormsby, Anukriti Sharma, Aleksei Zavarzin and Margaret Beckel.*
Prepared with support from members of the IUCN CEC Citizen Science Task Force.

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