

Global Biodiversity Framework		Potential public involvement		Biome			Taxon											Example of monitoring program with citizen involvement	
Target	Headline indicator	Collecting data	Collecting and analyzing	Terrestrial	Freshwater	Marine	Arachnida	Insecta	Lepidoptera	Mollusca	Amphibia	Aves	Mammalia	Osteichtyes	Reptilia	Plantae	Fungi	Developing country	Developed country
T1	Red List of Ecosystems	Y	N	Y	Y	Y	NA	NA	NA	NA	NA	NA	NA	NA	NA	Y	NA	BirdLife International’s monitoring of important bird areas	Monitoring by volunteer wardens at nature reserves and by amateur naturalists; volunteers monitoring of rainfall, vegetation
T1	Extent of natural ecosystems	Y	N	Y	Y	Y	NA	NA	NA	NA	NA	NA	NA	NA	NA	Y	NA	Customary conservation regimes (Sheil et al. 2015); GeoKey web-based platform for participatory mapping (https://geokey.org.uk/)	Customary conservation regimes (Tomaisini and Theilade 2019); volunteers monitoring of vegetation
T2	Area under restoration*	Y	Y	Y	Y	Y	NA	NA	NA	NA	NA	NA	NA	NA	NA	Y	NA	Volunteer monitoring of seagrass using SeagrassSpotter (Jones et al. 2016). Customary conservation regimes; community-based monitoring programs (Constantino 2020)	Anglers and water managers assessment of river barriers with the AMBER barrier tracker and the NZ Fish Passage Assessment Tool apps (Beletti et al. 2020; Franklin et al. 2022); volunteers monitoring of vegetation
T3	Coverage of protected areas and OECMs (Other Effective area-based Conservation Measures)	Y	Y	Y	Y	Y	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Indigenous Peoples' mapping their territories with the Mapeo app (ICCA Consortium 2023). See also T2 above	Same as for T1 ("Extent of natural ecosystems") above

T4	Red List Index	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Citizens reporting baboon spiders (Araneae: Theraphosidae) in Southern Africa (Campbell and Engelbrecht 2018) and lemurs in Madagascar (Andrianandrasana et al. 2022)	Monitoring by volunteer wardens at nature reserves and by amateur naturalists (e.g., mammals, birds, amphibians, fish, invertebrates, plants, fungi)
T4	The proportion of populations within species with an effective population size > 500	Y	N	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Local populations in Sierra Leone counting White-necked Picathartes (Picathartes gymnocephalus) nests (https://en.wikipedia.org/wiki/White-necked_rockfowl)	Hunter, fishing, and farmer clubs' monitoring of, for example, moose (Alces alces), bears (Ursus spp.), trout and salmon (Salmo spp.). Hunters' census of muskoxen (Ovibos moschatus) in Greenland (Cuyler et al. 2020)
T5	Proportion of fish stocks within biologically sustainable levels	Y	Y	N	Y	Y	N	N	N	N	N	N	N	N	Y	N	N	N	Fishers' monitoring of Pirarucu (Arapaima spp.) in the Amazon (Campos-Silva et al. 2019; Eyng et al. 2022). Customary conservation regimes	Pelagic fishermen monitoring stocks off Scotland (e.g. mackerel, Scomber scombrus; Mackinson et al. 2023). Coastal fishermen monitoring wildlife in Greenland (PISUNA; https://eloka-arctic.org/pisuna-net/en). Recreational fishermen monitoring coastal stocks (Støttrup et al. 2020). Anglers reporting their catch (Venturelli et al. 2017). Hunter records programs, e.g. wildlife triangle monitoring (Cretois et al. 2020)

T6	Rate of invasive alien species establishment	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Citizens monitoring of Rose-ringed Parakeets (<i>Psittacula krameri</i>) in South Africa (Shivambu et al. 2022); iNaturalist containing status and trends data on different aspects of species and habitats (https://www.inaturalist.org/; Soroye et al. 2022)	Community-based monitoring in Alaska (Hauser et al. 2021). Fishermen records in Australia and the Mediterranean Sea (Pecl et al. 2019; Perzia et al. 2023). Monitoring by volunteer wardens at nature reserves and by amateur naturalists. Bioblitzes such as the CityNatureChallenge (Meeus et al. 2023). Volunteers monitoring and destruction of invasive plants (e.g. Giant Hogweed, <i>Heracleum sphondylium</i>). iNaturalist; iRecord (https://irecord.org.uk/). Local Environmental Observer Network (www.leonetwork.org)
T7	Index of coastal eutrophication potential	Y	N	N	Y	Y	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Y	N	Citizens' measurements of nutrients and turbidity in coastal areas of Lake Tanganyika, Tanzania (Moshi et al. 2022) and in the Rokel River Basin, Sierra Leone (https://www.freshwaterwatch.org/pages/about)	Seafarers use of a simple white Secchi Disk to collect ocean transparency data (Kirby et al. 2021)

T9	Benefits from the sustainable use of wild species*	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Same as for T5 above for fish; Community members reporting of forest resources and illegal forest activities in Prey Lang, Cambodia (Brofeldt et al. 2018). Also community-based monitoring programs in multiple countries (e.g. Lyver et al. 2017; Constantino 2020; Moustard et al. 2021; Chiaravalloti et al. 2022)	Same as for T5 above. Many Indigenous guardian programs (also known as indigenous rangers or watchmen or -women; Reed et al. 2020); volunteers monitoring of negative benefits like toxic algal blooms (Anderson et al. 2019); Alaska Arctic Observatory and Knowledge Hub; Sea Ice for Walrus Outlook
T9	Percentage of the population in traditional occupations*	Y	Y	Y	Y	Y	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Focus group discussions of well-being-nature relationships in Rwanda and Malawi (https://online.ucpress.edu/cse/article/5/1/1425104/118512/Towards-Capturing-Human-Well-Being-Nature ; Schaafsma & Gross-Camp 2021)	
T10	Proportion of agricultural area under productive and sustainable agriculture	Y	Y	Y	N	N	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	FAO collects this as SDG indicator https://www.fao.org/sustainable-development-goals-data-portal/data/indicators/Indicator2.4.1-proportion-of-agricultural-area-under-productive-and-sustainable-agriculture/en	FAO collects this as SDG indicator https://www.fao.org/sustainable-development-goals-data-portal/data/indicators/Indicator2.4.1-proportion-of-agricultural-area-under-productive-and-sustainable-agriculture/en
T10	Progress towards sustainable forest management	Y	Y	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	Y	N	Community-based forest resource monitoring programs in multiple countries, e.g. in Tanzania, Philippines, Indonesia, Cambodia. Global Forest Watch (https://www.globalforestwatch.org)	Citizens' reports on forest interventions and imports to the Danish Ministry of Environment (300-400 citizen reports per year; I. Theilade in litt.)

T11	Services provided by ecosystems*	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Pollinator monitoring in Southern Africa (Taylor et al. 2020); see also T5 and T9 ("Benefits...") above	Pollinators: European Butterfly Monitoring scheme (eBMS), Butterfly Conservation Europe, Dutch Butterfly Conservation, Portuguese Butterfly Census, Biodiversity4All platform; see also T4 ("The proportion..."), T5, and T9 ("Benefits...") above
T13	Indicator on monetary benefits received*	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Community-Based carbon and biodiversity monitoring (e.g., Boissière et al. 2017)	Hunter, fishing, and farmer clubs' monitoring of, for example, income from hunting moose and bears, and from fishing trout and salmon
T13	Indicator on non-monetary benefits*	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Access to health care, safe water, cooking fuel, food security, child school attendance, child survival (https://repositorio.cepal.org/bitstream/handle/11362/44452/1/S1801161_en.pdf)	Same as for T4 ("The proportion of populations...") and T5 above
T18	Positive incentives in place to promote biodiversity conservation and sustainable use	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Community members reporting of forest resources and illegal forest activities in Prey Lang, Cambodia (Brofeldt et al. 2018); civil society associations' monitoring of above-ground biomass in REDD+ programs (Boissière et al. 2017)	The OECD PINE (Policy Instruments for the Environment) database on taxes, fees and charges, tradable permits, and subsidies (https://www.oecd.org/environment/resources/tracking-economic-instruments-and-finance-for-biodiversity-2020.pdf)

*) For indicators marked with an asterisk, an agreed up to date, methodology does not exist

NA, Not applicable