



Supporting Online Material for

Tracking Progress Toward the 2010 Biodiversity Target and Beyond

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2010 Biodiversity Indicator Development as of June 2009

When the CBD biodiversity indicator framework was adopted in 2006, some indicators were ready for immediate use at the global scale, but others required further development and testing. Both mature and emerging indicators are being tracked and developed by a wide range of scientific, inter-governmental, and non-governmental organizations as part of the CBD-mandated 2010 Biodiversity Indicators Partnership (2010 BIP). The 2010 BIP is working to provide harmonized indicators to a range of multilateral environmental agreements by improving the quality, availability, and use of these indicators at national, regional, and global scales. It offers a unique, collaborative opportunity to bring together a diverse array of datasets, spanning a range of scientific disciplines, to tell a unified story of what is happening to biodiversity, ecosystems, and the benefits they provide to society.

Representatives of the 2010 BIP partners met to review progress with the indicators in June 2008 and reported progress updates in June 2009. Table S1 is an extended summary of progress to date.

An international expert workshop was subsequently convened by UNEP-WCMC and the CBD Secretariat in July 2009 in Reading, UK, at which representatives from the 2010 BIP partners and others reviewed the use and effectiveness of the 2010 biodiversity indicators and considered the implications for the development of post-2010 targets and indicators. The main conclusions from this workshop have helped to shape the recommendations contained within this Policy Forum. A report of the Reading workshop will be available to download from the 2010 BIP Web site (www.twentyten.net), where further information and updates on the 2010 biodiversity indicators can also be found.

Table S1. Indicator development progress.

The ticked columns show progress in different facets of indicator development:

- Indicators are judged as having global coverage where they incorporate data from all continents (except Antarctica) or all major oceans. Coverage is marked with a 'p' where it is globally distributed but patchy.
- Indicators are judged as having time-series data where at least three data points spanning at least a decade are available. Time-series availability is marked with a 'p' where some data sets used in the indicator have time-series data, or where the data span less than 10 years.

- Indicators are judged to be **developed** (marked ●) where they have global coverage and time-series data as defined above, and where their methodologies have been published or otherwise subjected to peer review. Indicators are judged to be **under development** (marked ●) where they do not meet all three of these criteria, but where activity is under way to fulfil these criteria. Note that there is considerable variation in the level of development of indicators marked **under development**. Some are close to completion and methodologies are being written up for publication, whereas others are in the early stages of development. Indicators are judged to be **not under development** (marked ●) where no investment is being made and no activity is under way to develop a methodology and to collect and /or analyze data.

Focal Area	Indicator	2010 BIP Lead Technical Partner	Global coverage	Trend data available	Methods peer reviewed		Indicator status
Status and trends of the components of biodiversity	Trends in extent of selected biomes, ecosystems and habitats: Forests	FAO	✓	✓	✓	Currently compiled from national reporting as part of the FAO Forest Resource Assessment (FRA). In future this indicator could be assessed globally and continuously using satellite observations. Indicator included in the MDGs under Goal 7.	●
	Trends in extent of selected biomes, ecosystems and habitats: Others	UNEP-WCMC	p	p		Habitats monitored for which trend data compiled: coral reefs, seagrasses and mangroves. Other habitats under development: grasslands, dry and sub-humid lands, peatlands, inland wetlands, crop lands, polar/ice, tidal flats/estuaries.	●
	Living Planet Index	ZSL & WWF	✓	✓	✓	The Living Planet Index (LPI) is updated and published biannually. Calculated using time series population data for vertebrate species. The 2008 LPI is based on over 4,642 populations for over 1,686 species of fish, amphibian, reptile, bird and mammal.	●

Focal Area	Indicator	2010 BIP Lead Technical Partner	Global coverage	Trend data available	Methods peer reviewed		Indicator status
	Global Wild Bird Index	BirdLife International & RSPB		✓	✓	Measures average population trends of a representative suite of wild birds. Early phase of development at the global level. Regional indicators developed in Europe, North America and Australia. Progress made in Africa (Botswana, Morocco, Nigeria, Rwanda, South Africa, Uganda, Zimbabwe).	●
	Waterbird Indicator	Wetlands International				Based on the International Waterbird Census, with data beginning in 1967. Under development.	●
	Coverage of protected areas	UNEP-WCMC	✓	✓	✓	Monitors changes in extent of protected areas globally, including increases in the number of Marine Protected Areas (MPAs) and the growth in area of their coverage. Protected areas data are sourced from the World Database on Protected Areas (WDPA). Indicator included in the MDGs under Goal 7.	●
	Overlay of biodiversity with protected areas	UNEP-WCMC	✓	p		To monitor the changes in protection of areas of key importance for biodiversity worldwide. Will be measured at the scale of ecoregions and sites. For the latter, trend data are currently available at the global scale for coverage of Important Bird Areas (IBAs), and in development for Alliance for Zero Extinction sites.	●
	Management effectiveness of protected areas	University of Queensland & UNEP-WCMC	p		✓	Focus on three themes: protected area design, adequacy and appropriateness of management systems and processes, and delivery of protected area objectives. A suite of 14 Protected Areas Management	●

Focal Area	Indicator	2010 BIP Lead Technical Partner	Global coverage	Trend data available	Methods peer reviewed		Indicator status
						Effectiveness (PAME) indicators, developed between UNEP-WCMC, IUCN WCPA, and UQ, currently under peer review. Baseline data available.	
	IUCN Red List Index	ZSL, BirdLife International & IUCN	✓	✓	✓	RLIs have been published for all bird species (1988-2008) and mammal species (1996-2008) and preliminary RLIs are available for all amphibian species (1980-2004) and corals (1996-2008). RLIs for other taxa are in development, including through a sampled approach based on a representative sample of species selected from a broader spectrum of taxonomic groups, including reptiles, fish, freshwater crabs, dragonflies and damselflies, butterflies, dung beetles, monocotyledons, freshwater molluscs, crayfish, lobsters, fungi and algae. Indicator included in the MDGs under Goal 7.	●
	<i>Ex situ</i> crop collections	FAO & Bioersity International	P	P		Indicator shows changes in the crop genetic diversity available for sustainable agricultural production, and changes in the efforts to collect specimens and conserve. Methods still under development.	●
	Genetic diversity of terrestrial domesticated animals	FAO & ILRI				Indicator to show trends in the genetic diversity of domesticated animals of major socioeconomic importance over time. Baseline currently available.	●


Focal Area	Indicator	2010 BIP Lead Technical Partner	Global coverage	Trend data available	Methods peer reviewed		Indicator status
Sustainable use	Area of forest under sustainable management: certification	UNEP-WCMC	✓	✓		Indicator involves analysis of trends in area of forest committed to certification schemes, as well as contribution of certification schemes to conservation. Currently limited to FSC certification only.	●
	Area of forest under sustainable management: degradation and deforestation	FAO				Indicator will combine satellite observation data with information on growing stock (available for over 150 countries) and additional information from FRA to capture degradation and deforestation in forests. Will be reported as part of FAO's Forest Resource Assessment (FRA2010).	●
	Area of agricultural ecosystems under sustainable management	FAO				The four indices are (i) Development and adoption of policies, strategies, and plans that support and promote the sustainable use of agriculture; (ii) Adoption of best agricultural practices and technologies by farmers and herders; (iii) Status and trends of agricultural biodiversity and ecosystem services; and (iv) Status and trends in sustaining agricultural livelihoods. Current development focusing on pilot countries, with potential for global extension.	●
	Proportion of fish stocks in safe biological limits	FAO	✓	✓	✓	Indicator has been published in FAO publications including the State of the World's Fisheries and Aquaculture (SOFIA), and the catch statistics it is based on are also included in the Marine Trophic Index and Ecological Footprint. Indicator included in the MDGs under Goal 7.	●

Focal Area	Indicator	2010 BIP Lead Technical Partner	Global coverage	Trend data available	Methods peer reviewed		Indicator status
	Status of species in trade	CITES & UNEP-WCMC	✓	✓		Indicator measures changes in the status of species in international trade, based on the RLI.	●
	Wild Commodities Index	UNEP-WCMC & IUCN SUSG	✓	✓		Indicator will track how the status of wild populations of a selection of highly used species has changed over the last two decades, based primarily on the RLI and LPI	●
	Ecological footprint and related concepts	Global Footprint Network	✓	✓	✓	The Ecological Footprint of 150 countries has been calculated for every year from 1961 to 2002, and the global Footprint is calculated by summing national results or by using globally aggregated data. The Ecological Footprint is updated and published biannually	●
Threats to biodiversity	Nitrogen deposition	International Nitrogen Initiative	✓	✓	✓	Trends in the deposition of Nitrogen, and the subsequent response of ecosystems to this deposition are an indicator of threats to biodiversity and ecosystem health. Indicator partly based on modelling future trends.	●
	Invasive alien species	Global Invasive Species Programme	✓	✓		Four indicators under development: (i) Status of Alien Species Invasion; (ii) RLI for invasive species impacts; (iii) Trend in National Invasive Alien Species Policy; iv) Trends in International Invasive Alien Species Policy.. Currently an analysis based on the RLI is available.	●

Focal Area	Indicator	2010 BIP Lead Technical Partner	Global coverage	Trend data available	Methods peer reviewed		Indicator status
Ecosystem integrity and ecosystem goods and services	Marine Trophic Index	University of British Columbia	✓	✓	✓	The index is calculated largely using catch composition data from countries around the world; available online at www.seaaroundus.org	●
	Water quality	UNEP GEMS / Water Programme	✓	✓	✓	Index is calculated based on measurements from rivers and lakes of dissolved oxygen, pH, temperature, nitrogen and phosphorus, and electrical conductivity. Trends are examined on a station by station basis over the time-frame for which data are available, and range from 1 to 74 years, with an average span of 12 years.	●
	Forest Fragmentation	UNEP-WCMC & FAO				Indicator will use satellite observation data to assess changes in the fragmentation of forest ecosystems. Metadata analyses of case study landscapes resulted in a “BioFrag” index, which assigns a value for fragmentation effects on biodiversity to each cell of a landscape and allows calculation of an average across a landscape.	●
	River fragmentation and flow regulation	The Nature Conservancy & University of UMEA	✓		✓	Indicator measures the degree to which freshwater ecosystems have been altered by dams and reservoirs (i) fragmentation (number and placement of dams, length of river segments left between dams), and flow regulation (ii) (how much water is stored behind dams). Baseline dataset available.	●

Focal Area	Indicator	2010 BIP Lead Technical Partner	Global coverage	Trend data available	Methods peer reviewed	Indicator status
	Trophic integrity of other ecosystems					●
	Incidence of human-induced ecosystem failure					●
	Health and well-being of communities	UNEP-WCMC & WHO			Indicator will examine issues relating to human health and well-being, such as food security, nutritional intake and/or household income, in the context of biodiversity. Methods still under development.	●
	Nutritional status of biodiversity	FAO			Indicator to monitor biodiversity over time by measuring the composition and consumption of food and medicinal plant and animal genetic resources. (i) Identification of the number of foods consumed by variety or cultivar, as well as their component values. (ii) The second phase involves measuring the actual consumption of biodiversity for food and medicine over time. Baseline data available.	●
	Biodiversity for food and medicine	TRAFFIC International	✓	✓	Indicator has two approaches: (i) Red List Index showing trends in the extinction risk of species harvested for food and medicine; (ii) Availability - changing affordability of goods from species.	●

Focal Area	Indicator	2010 BIP Lead Technical Partner	Global coverage	Trend data available	Methods peer reviewed		Indicator status
Status of knowledge, innovations and practices	Status and trends of linguistic diversity and numbers of speakers of indigenous languages	UNESCO & Terralingua		✓		Indicator will assess the status and trends of linguistic diversity and numbers of speakers of indigenous languages. Includes 4,663 entries, from case studies of Latin America, North America, Europe, the Pacific and some countries in Africa.	●
	Indicator of status of indigenous & traditional knowledge						●
Status of access and benefits sharing	<i>To be determined</i>						●

Focal Area	Indicator	2010 BIP Lead Technical Partner	Global coverage	Trend data available	Methods peer reviewed		Indicator status
Status of resource transfers	Official development assistance provided in support of the Convention	OECD		p		Indicator uses 'biodiversity marker' developed by the <i>OECD Development Assistance Committee (DAC)</i> . Currently 2005-07 baseline data available.	
	Indicator of technology transfer						