



CONVENTION ON BIOLOGICAL DIVERSITY

SECRETARIAT

Ref.: SCBD/STTM/JM/RH/va/32217

10 October 2002

NOTIFICATION

Dear Madam/Sir:

Subject: Questionnaire on Indicators for Biological Diversity

In paragraph 2 of decision VI/7 B, the Conference of the Parties at its sixth meeting urged Parties that have not yet done so to respond to the questionnaire on the subject of indicators, which was sent by the Executive Secretary in May 2001, so as to enable the Executive Secretary to update the analysis.

Indicators are one of the means to measure progress and achieve targets. Article 7 of the Convention on Biological Diversity (CBD) states:

Each contracting Party shall, in accordance with its particular conditions and capabilities:

- a) Identify components of biological diversity important for its conservation and sustainable use; and*
- b) Monitor through sampling and other techniques, the components of biological diversity identified pursuant to paragraph (a) above, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use.*

Pursuant to this article, COP decisions II/9, III/9 and III/10 require that national implementation reports by Parties should include targets and indicators, and that a core set of indicators should be included by governments in their national implementation reports.

Given the complexity of the issue, the lack of data on many indicator variables and the lack of capacity in most developing countries to develop indicators and effectively monitor progress, it became clear from the meetings of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and the Conference of the Parties (COP), that the work on indicators is a long-term process.

As a starting point, and to enable the Conference of Parties to be able to report on global trends on biological diversity, it is necessary to compile a set of indicators that are currently being used by Parties as a basis to assist countries to develop their own indicators at the national level as part of their monitoring processes.

To: CBD National Focal Points (who have not responded to date to the Secretariat's Notification of 15 May 2001)



United Nations
Environment
Programme

Tel: (514) 288.22.20
Fax: (514) 288.65.88

Email: secretariat@biodiv.org
Web: www.biodiv.org

World Trade Centre
393 Saint-Jacques Street, Suite 300
Montréal, Québec, Canada H2Y 1N9

The Executive Secretary, with the assistance of a liaison group of experts, prepared a core set of indicators derived from various international and national initiatives, which was presented to the Conference of Parties at its fifth meeting. Some Parties felt that a global set of core indicators was premature and requested the Executive Secretary to promote the development of indicators at the national level in accordance with recommendation III/5, including the development of a key set of standard questions, a set of principles for designing national level monitoring programmes as well as a list of available and potential indicators.

It is in this context that I am requesting all National Focal Points to the Convention to provide the Secretariat with existing indicators that are currently operational in their respective country. Attached, for your reference, are some indicators that have been developed under various initiatives at various levels, which you may use as a reference point. You may add to or subtract from this list, indicate which of the listed indicators are used and provide any other comments, as appropriate. It may be useful to mention the specific purpose for which a particular indicator is used and its success as a monitoring tool for the status and trends of biodiversity.

In providing the indicators please do not restrict yourself to those indicators developed under the CBD process. Indicators developed under other processes such as CSD, State of the Environment Reporting etc. may also be relevant and should be included.

I have also been requested to develop a list of principles to guide Parties in developing their indicators and a set of standard questions that indicators can help to answer for policy makers. I am attaching as Annex 1 some proposed principles and questions for your comments.

We would appreciate if you could complete the table and return it to the Secretariat together with your comments **no later than 31 December 2002**. In case you are able to send your response by 30 November 2002 it will be incorporated in an analysis being prepared for an expert meeting on indicators scheduled for early December 2002.

Please accept the assurances of my highest consideration.

[signed]

Hamdallah Zedan
Executive Secretary

INDICATIVE LIST OF BIODIVERSITY INDICATORS

	INDICATORS	USED OR NOT	COMMENTS
ECOSYSTEM / HABITAT	Forestry biodiversity		
	Total forest area		
	Total Forest area as a % of total land area		
	% forest cover by forest type(primary, secondary or plantation)		
	Ratio between exotic species and native species in plantation area		
	Forest area change by forest type (primary, secondary or plantation)		
	Per capita wood consumption		
	Change in land use, conversion of forest land to other land uses (deforestation rate)		
	Self-generating area per habitat type		
	Self-generating area as a % of total area		
	Fragmentation of forests		
	% protected area of total forest area		
	% protected area with clearly defined boundaries		
	% forest managed for wood production		
	% forest land managed for recreation and tourism to total forest area		
	Area and % of forests managed for catchment protection		
	% forest protected areas by forest type by age, class, and successional stage)		
	Area and length and numbers of biological corridors		
	Annual volume and area of timber harvested-indigenous and plantation		
	Contribution of forest sector to GDP		
	Number and size of forest fires		
	Reforested and afforested areas		
	Area and extent of degraded lands reclaimed through forest operations		
	Relationship between forest cover and frequency of flooding		
	Changes in the proportions of stands managed for conservation and utilization of genetic resources (gene reserves, seed collection stands, etc.		

	INDICATORS	USED OR NOT	COMMENTS
	Area and % of forest area affected by anthropogenic effects (logging, harvesting for subsistence).		
	Area and percentage of forest area affected by natural disasters (insect attack, disease, fire and flooding)		
	Forest conversion affecting rare ecosystems by area		
	Extent of mixed stands		
	Managed forest ratio		
	Wood harvesting intensity		
	Estimate of carbon stored		
SPECIES	Absolute and relative abundance, density, basal area, cover, of various species		
	Threatened tree species as a percentage of the 20 most used for commercial purposes		
	Number of threatened, keystone, flagship species		
	Number of extinct, endangered, threatened, vulnerable and endemic forest dependent species by group (e.g. birds, mammals, vertebrates, invertebrates)		
	List of flora and fauna		
	Existence of procedures for identifying endangered, rare, and threatened species		
	Existing strategies for <i>in situ/ex situ</i> conservation of genetic variation within commercial, endangered, rare and threatened species of forest flora and fauna.		
	Number of forest dependent species whose populations are declining		
	Population levels of representative species from diverse habitats monitored across their range		
	Number and extent of invasive species		
ECOSYSTEM/ HABITAT	Agricultural Biodiversity		
	Agricultural area by crops (cereal, oil crops, forage, woodlands)		
	Agricultural area (intensively farmed, semi-intensively farmed and uncultivated)		

	INDICATORS	USED OR NOT	COMMENTS
	Change in area of agricultural land (conversion to or from agriculture)		
	Intensification and extensification of agricultural land use		
	Use of agricultural pesticides		
SPECIES	Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates)		
	Number of vertebrate species using habitat on agricultural land by species.		
	Differences in species diversity and abundance of arthropods and earthworms in organically and conventionally cultivated arable land		
	Rate of change from dominance of nondomesticated species to domesticated species		
	Species diversity used for food		
	Erosion/Loss of genetic diversity patrimony		
	Crops/livestock grown as a percentage of number of 30 years before		
GENES	Accession of crops and livestock in ex-situ storage (number or percentage)		
	Replacement of landraces with few imported ones		
	Replacement of indigenous crops		
	Accessions of crops generated in the past decade (per cent)		
	Coefficient of kinship or parentage of crops		
	Inbreeding/outbreeding rate		
	Rate of genetic interchange between populations (measured by rate of dispersal and subsequent reproduction of migrants)		
ECOSYSTEM/ HABITAT	Inland Waters Biodiversity		
	Surface water quality: Nitrogen, Dissolved oxygen, pH, pesticides, heavy metals, temperature		

	INDICATORS	USED OR NOT	COMMENTS
	BOD on water bodies (re: eutrophication)		
	Ground water quality: nitrates, salinity, toxicants		
	Stream flow		
	Stream sediment storage and load		
	Changes in vegetation type along water courses		
	Water resource vulnerability index		
	Ratio between maximum sustained yield and actual average abundance		
	Glacier fluctuations		
	Groundwater level (water table level)		
	Wetland area		
	Extent of wetland drainage and filling		
	Fish family diversity		
	Benthic macroinvertebrates: communities		
	Macrophytes: species composition and depth distribution		
SPECIES	Threatened freshwater fish species as a % total freshwater fish species known		
	Number of inland fish species introduced		
	Number of exotic flora and fauna species e.g. fish, aquatic weeds		
	Number of endemic flora and fauna		
	Changes in distribution and abundance of native flora and fauna		
	Number of extinct, endangered, threatened/endangered/vulnerable/endemic inland water species by group e.g. birds, aquatic mammals, invertebrates, amphibians, vascular plants, bottom fauna, Changes in fish catches by species		
	Species richness (number per unit area, number per habitat)		
	Indicator species		
ECOSYSTEM/ HABITAT	Coastal and Marine Biodiversity		
	% coastal zone with populations exceeding 100 inhabitants/km ²		
	Annual rate of mangrove conversion		
	Frozen ground activity		
	Coral chemistry and growth pattern		

	INDICATORS	USED OR NOT	COMMENTS
	Lake levels and salinity		
	Shoreline position		
	# of large scale bottom trawling vessels per 1 000km. of coastal area		
	E.coli counts and nutrient levels as % of baseline levels		
	Surface displacement Amount of poison chemicals and dynamite used for reef fishing.		
	Algae index		
SPECIES	Threatened fish species as a percentage of total fish species known		
	Change in proportion of fish catches by species per specific season		
	General Indicators¹		
ECOSYSTEM/HABITAT	Frozen ground activity		
	Karst activity		
	Slope failure (landslides)		
	Relative wilderness index (please give your definition)		
	Changes in limiting factors for key species e.g. nest holes for parrots, fruit bat roosting trees		
	Soil quality		
	Volcanic unrest		
	Δ in total area of a particular habitat type		
	Changes in largest block of a particular habitat type		
	Changes in average size of a particular habitat type		
	Change in mean nearest distance between blocks of a particular habitat type		
	Change in average width of break in an identified habitat corridor		
	Total area of protected areas (use IUCN definition of protected areas)		
	% of protected area to total area		
Change in habitat boundaries			

¹ These are indicators that apply to more than two thematic areas and have been listed together to avoid repeating them

SPECIES	INDICATORS	USED OR NOT	COMMENTS
	Percentage area in strictly protected status		
	Percentage of area dominated by non-domesticated species		
	Degree of connectivity of food web		
	Existence of institutional capacity, policy and regulatory framework for the planning, management and conservation of biological diversity		
	Size and distribution of protected areas		
	Change in number and/or distribution of keystone or indicator species		
	# of introduced species and genomes		
	Change in presence, location, area, numbers of invasive plant or animal species		
	No of introduced species and genome		
	Quantity of specimens or species of economic/scientific interest removed from the environment		
	Density of road network		
	Percentage of area dominated by non domesticated species occurring in patches greater than 1 000 sq. km.		
	Population growth and fluctuation trends of special interest species		
	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species		
	Presence of <i>taxa</i> on environmental integrity		
	Recorded species present by group		
	Indigenous species present by group		
	Non-indigenous species present by group		
	# of endemic/threatened/ endangered/vulnerable species by group		
Temporal change in number of species (increase/decrease)			
Change in composition of species overtime Species Group: total number versus threatened species			
Species with small populations vs larger population size			

	INDICATORS	USED OR NOT	COMMENTS
	Spatial differences in the number of rare vs common species		
	Spatial differences in the restricted vs wide range species		
	Representativeness of intra-specific variability of endangered and economically important species		
	Diversity of native fauna		
	Species richness (number, number per unit area, number per habitat area)		
	Species threatened with extirpation		
	Species threatened with extinction (number or percent)		
	Endemic species threatened with extinction		
	Species risk index		
	Species with stable or increasing populations		
	Species with decreasing populations		
	Threatened species in protected areas		
	Endemic species in protected areas		
	Threatened species in ex-situ collections		
	Threatened species with viable ex-situ populations		
	Species used by local residents		