UNEP

CBD

CONVENTION ON
BIOLOGICAL DIVERSITY

Distr.
GENERAL

UNEP/CBD/EM-Indicators/1/2
5 February 2003

ORIGINAL: ENGLISH

EXPERT MEETING ON INDICATORS OF
BIOLOGICAL DIVERSITY INCLUDING
INDICATORS FOR RAPID ASSESSMENT
OF INLAND WATER ECOSYSTEMS
Montreal, Canada, 10 - 12 February 2003

DEVELOPING INDICATORS FOR NATIONAL-LEVEL MONITORING OF BIODIVERSITY

Note by the Executive Secretary

I INTRODUCTION

1. In its decision VI/7B the Conference of the Parties (COP) to the Convention on Biological Diversity requested the Executive Secretary to convene a meeting of an expert group to further develop the three annexes to document UNEP/CBD/SBSTTA/7/12 on:

(a) Principles for developing national-level monitoring and indicators;

(b) A set of standard questions for developing national-level indicators; and

(c) A list of available and potential indicators based on a conceptual framework that has qualitative and quantitative approach.

2. Paragraph 4 of decision VI/7B provides some guidance on the content and structure of the report to be prepared by the Executive Secretary for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) prior to the seventh meeting of the Conference of the Parties. In particular, the Executive Secretary was requested to:

(a) consider development and segregation of the key questions according to the three levels of biodiversity, and reorder them to correspond to articles of the convention as far as possible, and give attention to the use of early warning indicators;

/…

(b) consider developing and organizing the list of indicators for each thematic area grouped as driver, pressure, state, impact and response to pressure on biodiversity;

(c) collaborate, for the development of the list of indicators, with regional and international initiatives, including the Organisation for Economic Co-operation and Development, the Commission on Sustainable Development, the Ramsar Convention on Wetlands, the Pan-European processes (the Pan-European Biological and Landscape Strategy and the Ministerial Conference on the Protection of Forests in Europe), the Montreal process on criteria and indicators for the conservation and sustainable management of temperate and boreal forests, the Food and Agriculture Organization of the United Nations and the United Nations Forum on Forests.

3. In response to decision VI/7 B, the Executive Secretary has convened the meeting of experts from 10-12 February 2003 in Montreal with generous support from the Government of the United Kingdom of Great Britain and Northern Ireland. This meeting will also consider indicators for the monitoring of targets in the framework of the Convention Strategic Plan, the Global Strategy for Plant Conservation, and the Plan of Implementation of the World Summit on Sustainable Development (WSSD).

TABLE OF CONTENTS

II BACKGROUND

4. Article 7 of the Convention on Biological Diversity invites Parties to *inter alia* identify and monitor important components of biological diversity. In pursuance of this provision, the Conference of the Parties in its **Decision II/17,** urged Parties to submit their first national reports, including section on monitoring and evaluation relating to the implementation of Article 6, by:

(a) explaining the measures to be used for tracking the results of the action plan and for monitoring changes in the economy, environment and society;

(b) giving the indicators that will be used;

(c) presenting the individuals and organizations who will carry these responsibilities and how they were selected;

(d) noting the audience for the reports, along with the document's content and timing of implementation.

5. In **Decision III/10,** Parties were urged to identify indicators of biological diversity and to develop innovative methods of implementing Article 7 as a high priority, in particular commending the value of rapid biological diversity assessment approaches as an efficient and cost-effective way of assessing biological diversity and identifying priorities for action, and recognizing also the role of remote sensing as a useful tool for monitoring. In the same decision, recommendation II/1 of the Subsidiary Body on Scientific, Technical and Technological Advice concerning indicators, monitoring and assessment of biological diversity was endorsed. In this recommendation, SBSTTA identified eight priority tasks including:

(a) Capacity building, strengthening of institutions and funding in developing countries;

(b) Development of the clearing house mechanism to improve the flow of information;

(c) Development/refinement of national guidelines on assessment and monitoring methods and indicators;

(d) A critical review of methods of inventory and assessment;

(e) Development of a core set of indicators that are known to be operational, for national reports;

(f) Development of indicators in thematic areas important to the CBD, particularly coastal and marine ecosystems, agricultural biological diversity, forests, and freshwater ecosystems;

(g) Development of an indicative framework of categories of activities with significant adverse impacts on biodiversity;

(h) Development of methods to include assessment of biodiversity in assessments of natural resources (forests, land, soils, marine living resources).

6. In response to this decision, the Executive Secretary prepared document **UNEP/CBD/SBSTTA/3/9**, for consideration by the third meeting of the SBSTTA. This document proposed a core set of indicators of biological diversity and suggested a two track approach including time table to gradually develop and refine a global indicator system.

7. The Subsidiary Body on Scientific, Technical and Technological Advice also considered document **UNEP/CBD/SBSTTA/3/INF.13** on **"**Identification and Monitoring of Components of Biological Diversity of Inland Water Ecosystems: Consideration of Article 7 and Elaboration of Terms in Annex I of the Convention", which provided additional background on the development of a core indicator system. The document included a set of questions relating to state, pressure, capacity and effectiveness of measures and proposed an assessment framework. A specific reference was made to the Natural Capital Index as a way of integrating ecosystem quantity, ecosystem quality and relative numbers of threatened and extinct species.

8. In **Decision IV/1**, the Conference of the Parties endorsed recommendation III/5 of SBSTTA, which asked for the preparation of:

(a) A key set of standard questions;

(b) A set of principles for designing national-level monitoring programmes and indicators;

(c) A menu of possible approaches, a synthesis of best practices and lessons from case studies;

(d) Emphasis on capacity-building in indicator development and application.

(e) SBSTTA III/5 also recommended a time scale for each of the activities.

9. In preparation of the fifth meeting of the SBSTTA, the Executive Secretary prepared document **UNEP/CBD/SBSTTA/5/12**, which reviewed the status of the development of indicators of biological diversity and proposed a core set of generic state and pressure indicators to assist Parties in the design or improved implementation of their national monitoring programmes.

10. In **Decision V/7**, the Conference of the Parties requested the Executive Secretary, in broad consultation with Parties, drawing on the roster of experts, and in collaboration with other relevant organizations, bodies and processes, to carry out the pending activities set out in the work programme on indicators of biological diversity as approved by decision IV/1 A of the Conference of the Parties and, in particular, to develop:

(a) A set of principles for designing national-level monitoring programmes and indicators;

(b) A key set of standard questions and a list of available and potential indicators, covering the ecosystem, species and genetic levels, taking into account the ecosystem approach, that may be used by Parties at their national level and in national reporting

and that also allow for regional and global overviews on the state and trends of biodiversity and, if possible and appropriate, any responses from policy measures;

11. Also in **Decision V/7**, the Conference of the Parties encouraged Parties and Governments to establish or increase regional cooperation in the field of indicators, monitoring and assessment and acknowledged that the capacity of many countries, particularly least developed countries, to reliably and consistently monitor indicators is limited and that, therefore, indicators would need to be developed incrementally over time, based on national priorities.

12. To assist SBSTTA in considering progress on the implementation of cross-cutting issues on identification, monitoring, indicators and assessments, the Executive Secretary prepared document **UNEP/CBD/SBSTTA/7/12**, which proposed guidelines for the development of indicator-based monitoring and a set of key questions. It also listed indicators already used or likely to be used at national level.

13. Document **UNEP/CBD/SBSTTA/7/INF.8** listed the ongoing and proposed assessments relevant to the CBD. The following processes are specifically related to the development and use of indicators in the thematic areas and cross-cutting themes of the CBD:

(a) For **forests** nine regional and international processes have developed criteria and indicators. International coordination, development and implementation of these is carried out by the Food and Agriculture Organization of the United Nations (FAO);
(b) The Organisation for Economic Co-operation and Development (OECD) leads the indicator development for **agricultural biodiversity**, whereas FAO, in collaboration with the International Plant Genetic Resources Institute (IPGRI), leads on indicators for genetic resources;
(c) Work plans on coral reefs under development for **marine and coastal biodiversity** include work on indicators. The Global International Water Assessment's (GIWA) Scaling and Scoping Exercise uses indicators to assess environmental impacts, socio economic impacts and future conditions;
(d) Under the lead of UNEP, GIWA's mandate also includes the assessment of international **inland waters**. The World Water Assessment (WWA) Programme is a UN-wide programme to develop the tools and skills needed to achieve a better understanding of factors influencing the supply and quality of global freshwater resources including the development of indicators;
(e) Indicators are one of the priorities in the joint work programme on **dry and sub-humid lands** by the SCBD and the Secretariat of the United Nations Convention to Combat Desertification (UNCCD);
(f) The **Global Taxonomy Initiative** (GTI) plans to provide input for the development of a menu of indicators in thematic areas and to support the development of national monitoring and indicator programmes;
(g) The **Global Strategy for Plant Conservation** has identified targets for the documentation, conservation and use of plant diversity. In its **Decision VI/9** the Conference of the Parties states that in order to monitor progress towards achieving these targets, baseline data and a series of indicators may need to be developed;

(h) For **climate change** the development of recommendations on criteria and indicators are included in the terms of reference of the ad hoc technical expert group on climate change and biological diversity.

14. The current document was prepared to facilitate the work towards implementing Decision VI/7-B by reorganizing the set of standard questions and the list of indicators according to the guidance provided. Questions and indicators, which are pertinent to the Strategic Plan for the Convention on Biological Diversity (Decision VI/26) and/or to the Plan of Implementation of the World Summit on Sustainable Development, have been highlighted.

III PRINCIPLES FOR DEVELOPING NATIONAL-LEVEL MONITORING PROGRAMMES AND INDICATORS

15. A number of principles guiding the selection of indicators for the development of national-level monitoring programmes have emerged from discussions during previous SBSTTA and COP meetings. These have been organized to reflect aims and purpose of developing and using indicators, information requirements and resource needs. Annex 1 presents a set of draft principles for developing national monitoring programmes and indicators.

16. Since biodiversity is subjected to pressures from the human environment, interacts with the abiotic environment, and is influenced by management and policy responses, it is challenging to isolate biodiversity indicators from those defining indirect influences. Biodiversity indicators must therefore complement sets of indicators for the socio-economic, cultural and human environment as well as those describing the abiotic environment and management or policy responses. Such sets of indicators have been developed *inter alia* by the United Nations Commission for Sustainable Development (CSD), the Organisation for Economic Cooperation and Development (OECD), the World Health Organization (WHO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) for various areas acting as pressures or drivers influencing biodiversity. Global assessments focusing on the abiotic environment have been or are being carried out by *inter alia* the Intergovernmental Panel on Climate Change relating to the depletion of stratospheric ozone and the Global International Waters Assessment (GIWA). Figure 1 presents a graphic model of these interactions.

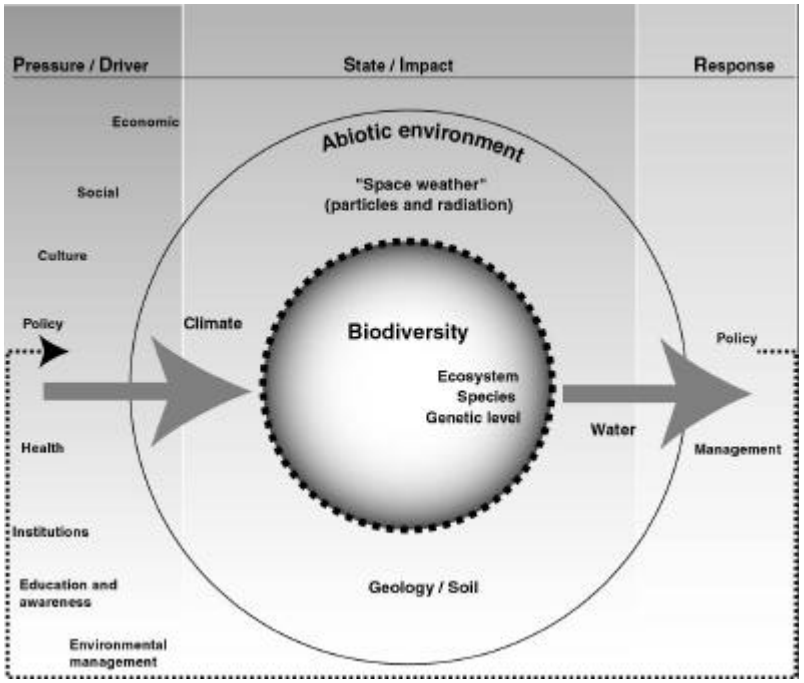

Figure 1. *Graphic model of types of indicators following the DPSIR (driver-pressure-state-impact-response) model.*

17. The focus is on national indicators, which at the same time allow for regional and global overviews in order to evaluate the implementation of the Convention. In view of the policy target to halt biodiversity loss by 2010, the indicator framework should provide for means of evaluating trends of biodiversity in the light of respective policy targets. Indicators should:

(a) be country-specific;

(b) allow changes in biodiversity trends to be detected at an early enough stage to permit remedial management actions and policies to be effective;

(c) provide, or contribute to the development of, means for the evaluation of indicators against baseline or background information;

(d) allow comparison across geographic and time scales;

(e) demonstrate the change of biodiversity in relation to targets.

IV STANDARD QUESTIONS FOR DEVELOPING NATIONAL-LEVEL MONITORING AND INDICATORS

18. In Annex 2 the questions from document UNEP/CBD/SBSTTA/7/12 have been segregated by type of indicator and include their relevance to the three levels of biological organization as well as to the respective CBD articles. Their relevance to the Programme of Implementation of the World Summit on Sustainable Development, the CBD Strategic Plan and the Global Strategy for Plant Conservation is also indicated.

19. It may be useful to consider revising this section by limiting questions to those relating to state and impact indicators and expanding them to reflect additional articles of the CBD and relate to all thematic areas and cross-cutting themes relevant to the CBD. It may also be worthwhile to relate the questions more clearly to the indicators, possible by combining question(s) and related indicators into one coherent table[1].

V INDICATORS

20. In response to paragraph 1 (b) of decision V/7 of the Conference of the Parties, requesting the Executive Secretary to develop a list of available and potential indicators, the Executive Secretary had sent out a questionnaire to Parties in May 2001. A generic list of indicators that had been compiled from various initiatives on indicators by Parties and international organizations was annexed to the questionnaire, with a request that Parties mark the indicators they currently use and add any others that they use or intend to use but are not included in the list.

21. Because only 32 Parties had replied by August 2001, the Conference of the Parties, in Decision VI/7 B, urged Parties that had yet not done so to respond to the questionnaire so as to enable the Executive Secretary to update the analysis. The same questionnaire was therefore sent

[1] See for example CGRFA-9/02/Inf.2 (Indicators and reporting format for monitoring the implementation of the Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture).

out again. By 31 January 2003, the following Parties had responded: Argentina, Armenia, Austria, Bahamas, Bahrein, Belgium, Bosnia and Herzegovina, Canada, Colombia, Costa Rica, Denmark, Eritrea, Estonia, European Community, Finland, Guatemala, Guinea Bissau, Guinea Bissau, Honduras, Hungary, Iran (Islamic Republic of), Ireland, Japan, Lao People's Democratic Republic, Latvia, Lebanon, Macedonia, Mauritius, Moldova, Mongolia, New Zealand, Niue, Norway, Palau, Panama, Poland, Portugal, Qatar, Romania, Singapore, Slovak Republic, South Africa, Spain, Sri Lanka, Sudan, Sweden, Switzerland, Tunesia, Turkey, United Kingdom, United States of America and Zimbabwe.

22. Annex 3 lists general indicators (those applying to several thematic areas) and indicators of forest, agricultural, inland water and marine and coastal biodiversity in the order of frequency of mentions. It should be noted, however, that because many countries are currently in the process of developing indicator-based monitoring systems, indicators not used in 2001 might be used (or considered) in 2003.

23. Several Parties felt that the indicators mentioned in the questionnaire would not adequately reflect their thinking on indicators and that a framework and targets needed to be developed. The table below therefore only reflects a component of the processes currently underway and should be seen as indicative.

24. Annex 4 contains a list of about 200 indicators compiled from a variety of sources that could serve as the basis for a menu of indicators. However, this list is neither coherent nor exhaustive and requires a thorough description of methodologies. Additional input may be required to structure, adapt and complement this list to reflect national and/or regional requirements and priorities.

25. For ease of reference the indicators have been sorted according to their applicability within each of the thematic programme areas (agricultural, arid and semi-arid land, forest, inland water, marine and coastal and mountain biological diversity). Because many indicators are relevant to several thematic areas this has resulted in repetition. Within each programmatic area they were further sorted into the respective categories of driver (D), pressure (P), state (S), impact (I) and response (R) indicators. It should be noted that the DPSIR model is a feed-back model: depending on the perspective, a response indicator can be a driver. An indicator on forest certification can be considered a response (certification as a political remedy to counter unsustainable practices of forest management and the loss of forest biodiversity) or a driver (certification as a system to award sustainable management practices thus promoting the consideration of the ecosystem approach).

26. The ultimate purpose of monitoring and documenting the state of biodiversity is to enable its users to react to signs that point to (accelerating or increasing) changes of biodiversity. Some indicators with a potential to serve as "early warning" signs have therefore been marked in Annex 4. A large number of species has been assessed for their indicator value within specific ecosystems.

ANNEX 1. DRAFT PRINCIPLES FOR DEVELOPING NATIONAL-LEVEL MONITORING AND INDICATORS

27. The primary role of indicators in the context of the Convention on Biological Diversity is as a tool for the management of biological diversity at local and national levels. Indicators are also useful for the assessment of the implementation of the Convention. Given the widely varying conditions among countries, most national-level indicators will be country-specific. The principles presented below are based on document UNEP/CBD/SBSTTA/7/12.

1. Relevance to the objectives of the Convention

28. Indicators should be relevant to the implementation of the provisions of the Convention. They should be selected or developed and applied to monitor and assess:

(a) The status and trends of biological diversity and its components;

(b) Direct and underlying causes of biodiversity loss and degradation, including the effects of processes and categories of activities which have or are likely to have significant adverse impacts on biological diversity; and

(c) The effectiveness of measures taken including capacity needed for the implementation of the Convention.

2. Management and policy relevance

29. Indicators are meant to provide information for informed decisions. For policy makers, indicators should show the condition and trends of biodiversity and thus indicate where and when policy interventions are necessary. For managers they may indicate the need to sustain appropriate action, to take remedial action or change management techniques. The types of information needed include information on the condition and trends of biodiversity; information to demonstrate the value of the policy or activities, in order to generate public and political support; and information on effectiveness of policies and activities to allow improvement in implementation over time.

3. User-driven nature

30. Indicators should be chosen and designed by decision makers, or having their needs in mind. The conservation of biological diversity and sustainable use of its components are predominantly a national and sometimes a local responsibility. Parties have sovereign rights over their biological resources and can use them according to their national priorities. Similarly, monitoring of these resources should also be driven by national priorities and indicators should thus be part of a country's biodiversity strategy and action plan. Effective management usually requires measurable targets and measures that policy-makers set. Scientists determine relevant biodiversity variables, monitor current state, determine baselines and develop models to make projections of the likely future state given a range of possible policy options. Carefully chosen indicators can thus give direction to the monitoring and research programmes. Therefore, the choice of indicators should be a collaborative process involving policy-makers and scientists.

4. Relevance to target audience

31. Biodiversity indicators summarize data on complex environmental issues to indicate the overall status and trends of biodiversity. They should quantify information so that its significance is apparent to the intended audience, simplify information in order to help communicate complex phenomena and be easily understood by the target audience. An indicator should be relatively simple to understand and appealing to the target audience.

5. Technical features

32. Successful indicators should:

(a) Be scientifically sound, credible and meaningful, and not send the wrong message;

(b) Rely on achievable quantitative an affordable data;

(c) With regard to their scope, address key properties of biodiversity and be compatible with the ecosystem approach, the primary framework for action in the Convention. Biodiversity loss or changes are determined by multiple factors including natural and anthropogenic factors, biological and socioeconomic drivers, past and present factors operating singly or in combinations, on a scale depending on the ecosystem problem. Indicators should therefore be integrative, ecosystem relevant and support the full range of key decisions. It should be noted, however, that biodiversity may not be simply measured by a single indicator; a set of indicators may be necessary;

(d) Be accessible to accurate and affordable monitoring;

(e) Be sensitive to pressures including:

(i) Having some knowledge available on dose-effect relationships, and

(ii) Being interlinkable to socio-economic and environmental models for making projections.

(f) Indicators should thus be able to detect changes in systems in time frames and on the scales that are relevant to the decisions. It is important to detect changes before it is too late to correct any problems that are detected. The size of change detected should be on the same or finer scale than the changes that the decision maker is attempting to achieve or prevent. For example, detecting extinction rates would not be appropriate if the aim of the decision maker is to improve the conservation status of an endangered species;

(g) Where possible, be stable and have natural fluctuations distinguishable from anthropogenic factors;

(h) Be useful as an indicator for several decades (at least 30-50 years);

(i) Be part of a monitoring system using determinable baselines for the assessment of improvements and declines in biodiversity, and targets.

ANNEX 2. STANDARD QUESTIONS FOR DEVELOPING NATIONAL-LEVEL INDICATORS

Biodiversity level (E=ecosystem, S=species, G=gene)	Standard question	**Reference to CBD article, WSSD paras, GSPC target and CBD Strategic Plan goal**
Questions relating to driver indicators		
ESG	What anthropogenic processes have the greatest influence on the current and near future status of biodiversity? Which social and economic root causes are most responsible for the observed changes in human threats to biodiversity?	**CBD7c; WSSD2, 4, 5, 6**
ESG	Are there early warning signs of problems that require early attention? Which new threats are anticipated?	**CBD7b, c; WSSD6**
ESG	Are direct and/or underlying causes of biodiversity loss being addressed?	**CBD6; WSSD2, 4, 5, 6**
ESG	Are there known perverse management activities, incentives and policies?	**CBD6b, WSSD10, 14**
Questions relating to pressure indicators		
ESG	What pressures are operating? What type of pressures are these?	**CBD7c**
ESG	Which pressures are entirely natural and operating at their historic level?	**CBD7c**
ESG	Which pressures are natural, but are having an effect that differs from their historic effect because of past biodiversity losses, or because they interact with other pressures?	**CBD7c**
ESG	Which pressures are unnatural, and the result of past activities (e.g. introduction of invasive alien species)?	**CBD7c**
ESG	Which pressures are the result of current human activities?	**CBD7c; GSPC11**
ESG	What are the most direct and indirect pressures to biodiversity?	**CBD7c**
Questions relating to state indicators		
ESG	Are the benefits derived from consumptive and non-consumptive uses known?	**CBD7c, 8i, 8j**
SG	What is the state of knowledge (including traditional knowledge) of biological diversity; the pressure leading to biodiversity loss; and measures taken to conserve, sustainably use biodiversity and equitably share the benefit derived from the utilization of genetic resources? Is the knowledge improving?	**CBD12; GSPC2**

ESG	What is the current state of biological diversity? What is the current state of the goods and services provided by biological diversity?	**CBD7a; GSPC2**
ESG	How many globally or regionally unique populations, species and habitats are at risk of extinction?	**CBD7a, b; GSPC2**
ESG	Are these pressures stable, declining or worsening? What is the threat status of known genetic resources, species, ecosystem types, and habitats of poorly known taxa?	**CBD7c**
ESG	What tools are there to assess biodiversity loss and for which components of biodiversity?	**CBD7, 12**
ESG	Is there a protected area network and how representative is the network?	**CBD8a; GSPC4, 5**
ES	What is species abundance and/or distribution (evenness), species-richness, and ecosystem structure and complexity?	**CBD7a**
ESG	Is biological diversity status stable, improving or deteriorating? What is the extent of the change? How much change results from human activities?	**CBD7c**
ESG	How well are the use and non-use values of biodiversity known?	**CBD7a, 10; GSPC 13**
ESG	How well is the relationship between pressures and biodiversity outcomes understood?	**CBD7c**

Questions relating to impact indicators

ESG	How much biodiversity (landscape/ecosystem diversity, natural habitats, species and genetic resources) is being lost?	**CBD7b**
ESG	Are the impacts of uses of biodiversity known?	**CBD7c**
ESG	What is the level of the possible impact of pressures?	**CBD7c**

Questions relating to response indicators

ESG	To what extent have components in Annex I to the Convention on Biological Diversity (including in particular geographic areas and major ecosystem types) been identified, assessed for risk and prioritized in terms of needed action?	**CBD7a; GSPC1, 2**
ESG	How much human and institutional capacity is available to implement the Convention?	**CBD12; WSSD6; GSPC15; CBD-SP2**
ESG	How much support (financial resources, institutional support and incentives) is currently being provided to implement the Convention?	**CBD20; CBD-SP2**
ESG	What additional means (including new and additional financial resources) are needed to address the pressures?	**CBD21; WSSD6; CBD-SP2**

ESG	Have response programmes and policies been developed, and are they being implemented?	**CBD6; WSSD6, 8; GSPC3, 7; CBD-SP1**
ESG	Are there programmes in place to improve knowledge of biodiversity (status and trends; threats; taxonomy; value; ecosystem functioning; methods of conservation and sustainable use)?	**CBD7, 12**
ESG	How effective are/have been the measures taken to implement the Convention?	**CBD7b, CBD7d**
ESG	Is management effort targeted to the highest priority threats?	**CBD6, Annex 1; GSPC 5, 6, 7, 8, 9, 10, 12**
ESG	Are there problems with regard to legal protection, level of enforcement or level of active management?	**CBD8**
ESG	Is management effort, including resource allocation, in relation to present and past threats sufficient to slow the rate of loss and prevent irreversible loss?	**CBD8b, 8c, 20**
ESG	Are costs and benefits of using biodiversity equitably shared?	**CBD1, 8j**
ESG	To what extent has biodiversity been integrated into relevant sectoral and cross-sectoral plans, programmes and policies? How effective has this integration been?	**CBD6b, 10a; CBD-SP1**
ESG	How effective is the biodiversity monitoring system in place?	**CBD7b**
ESG	What sustainable use practices are in place and how sustainable are they?	**CBD8i, 10c; GSPC13**

Questions relating to the monitoring protocol

ESG	What is the status of implementation of each provision of the Convention?	**CBD5-21**
ESG	Is progress being made in achieving major targets and objectives set out in planning processes, in particular to reduce and prevent biodiversity loss?	**CBD7b, d GSPC: all targets; CBD-SP3**

Questions relating to data curation and analysis

ESG	Are information management systems and related capacity in place to allow available information to be effectively maintained, accessed and utilized?	**CBD7d, 12, 17; GSPC1; CBD-SP4**
ESG	Do taxonomic collections meet international standards? Are collections being effectively maintained?	**CBD9b; GSPC1**
ESG	How well is the material in living *ex situ* collections known?	**CBD9b, 9d; GSPC1**

ANNEX 3. SYNTHESIS OF RESPONSES TO THE QUESTIONNAIRE ON AVAILABLE AND POTENTIAL INDICATORS

Parties using indicator n = 52	GENERAL INDICATORS
38	Total area of protected areas (use IUCN definition of protected areas)
38	Percentage of protected area to total area
37	Size and distribution of protected areas
33	Percentage area in strictly protected status
32	Number of endemic/threatened/ endangered/vulnerable species by group
31	Soil quality
28	Existence of institutional capacity, policy and regulatory framework for the planning, management and conservation of biological diversity
28	Species threatened with extinction (number or percent)
28	Endemic species threatened with extinction
28	Endemic species in protected areas
27	Threatened species in protected areas
27	Diversity of native fauna
25	Species with decreasing populations
25	Species richness (number, number per unit area, number per habitat area
23	Density of road network
23	Recorded species present by group
23	Species used by local residents
23	Population growth and fluctuation trends of special interest species
22	Threatened species in ex-situ collections
21	Species group: total number versus threatened species
21	Temporal change in number of species (increase/decrease)
20	Species with stable or increasing populations
20	Species threatened with extirpation
19	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species
19	Indigenous species present by group
18	Change in number and/or distribution of keystone or indicator species
18	Threatened species with viable ex-situ populations
17	Change in habitat boundaries
17	Number of introduced species and genomes
16	Change in composition of species overtime
14	Non-indigenous species present by group
14	Changes in average size of a particular habitat type
14	Change in presence, location, area, numbers of invasive plant or animal species
13	Quantity of specimens or species of economic/scientific interest removed from the environment
13	Changes in limiting factors for key species e.g. nest holes for parrots, fruit bat roosting trees
12	Slope failure (landslides)

12	Diversity in total area of a particular habitat type
11	Spatial differences in the number of rare vs. common species
10	Changes in largest block of a particular habitat type
9	Species risk index
9	Species with small populations vs. larger population size
8	Spatial differences in the restricted vs. wide range species
8	Percentage of area dominated by non-domesticated species
7	Representativeness of intra-specific variability of endangered and economically important species
6	Volcanic unrest
6	Presence of taxa on environmental integrity
6	Karst activity
6	Relative wilderness index
4	Change in mean nearest distance between blocks of a particular habitat type
4	Degree of connectivity of food web
2	Change in average width of break in an identified habitat corridor
2	Percentage of area dominated by non domesticated species occurring in patches greater than 1 000 sq. km.
1	Frozen ground activity
Parties using indicator n = 52	**Forest biodiversity**
45	Total forest area
43	Total forest area as a percentage of total land area
38	Percentage forest cover by forest type (primary, secondary or plantation)
38	List of flora and fauna
36	Percentage protected area of total forest area
33	Reforested and afforested areas
30	Forest area change by forest type (primary, secondary or plantation)
30	Number of extinct, endangered, threatened, vulnerable and endemic forest dependent species by group (e.g. birds, mammals, vertebrates, invertebrates)
29	Number and size of forest fires
27	Change in land use, conversion of forest land to other land uses (deforestation rate)
27	Contribution of forest sector to GDP
27	Area and percentage of forest area affected by anthropogenic effects (logging, harvesting for subsistence).
27	Absolute and relative abundance, density, basal area, cover, of various species
26	Percentage forest managed for wood production
26	Existence of procedures for identifying endangered, rare, and threatened species
25	Number of threatened, keystone, flagship species
25	Existing strategies for in situ/ex situ conservation of genetic variation within commercial, endangered, rare and threatened species of forest flora and fauna.
24	Percentage protected area with clearly defined boundaries
24	Annual volume and area of timber harvested-indigenous and plantation
22	Area and percentage of forest area affected by natural disasters (insect attack, disease, fire and flooding)
22	Number and extent of invasive species

21	Percentage forest protected areas by forest type by age, class, and success ional stage)
21	Wood harvesting intensity
21	Managed forest ratio
20	Changes in the proportions of stands managed for conservation and utilization of genetic resources (gene reserves, seed collection stands, etc.
20	Per capita wood consumption
19	Extent of mixed stands
18	Estimate of carbon stored
18	Percentage forest land managed for recreation and tourism to total forest area
17	Number of forest dependent species whose populations are declining
17	Fragmentation of forests
16	Threatened tree species as a percentage of the 20 most used for commercial purposes
15	Area and extent of degraded lands reclaimed through forest operations
14	Area and percentage of forests managed for catchment protection
14	Self-regenerating area as a percentage of total area
13	Population levels of representative species from diverse habitats monitored across their range
12	Self-regenerating area per habitat type
10	Ratio between exotic species and native species in plantation area
9	Forest conversion affecting rare ecosystems by area
8	Area and length and numbers of biological corridors
5	Relationship between forest cover and frequency of flooding
Parties using indicator n = 52	**Agricultural Biodiversity**
35	Use of agricultural pesticides
34	Agricultural area by crops (cereal, oil crops, forage, woodlands)
32	Change in area of agricultural land (conversion to or from agriculture)
29	Agricultural area (intensively farmed, semi-intensively farmed and uncultivated)
22	Species diversity used for food
21	Intensification and extensification of agricultural land use
16	Erosion/Loss of genetic diversity patrimony
15	Replacement of landraces with few imported ones
15	Crops/livestock grown as a percentage of number of 30 years before
14	Replacement of indigenous crops
13	Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates)
13	Accession of crops and livestock in ex-situ storage (number or percentage)
11	Number of vertebrate species using habitat on agricultural land by species.
9	Accessions of crops generated in the past decade (per cent)
6	Differences in species diversity and abundance of arthropods and earthworms in organically and conventionally cultivated arable land
6	Coefficient of kinship or parentage of crops
6	Rate of change from dominance of nondomesticated species to domesticated species
6	Inbreeding/outbreeding rate
4	Rate of genetic interchange between populations (measured by rate of dispersal and subsequent reproduction of migrants)

Parties using indicator n = 52	**Inland Waters Biodiversity**
33	Surface water quality: Nitrogen, Dissolved oxygen, pH, pesticides, heavy metals, temperature
30	Ground water quality: nitrates, salinity, toxicants
29	Biological Oxygen Demand (BOD) on water bodies (re: eutrophication)
29	Fish family diversity
28	Wetland area
27	Groundwater level (water table level)
25	Benthic macroinvertebrates: communities
25	Stream flow
24	Number of inland fish species introduced
23	Number of endemic flora and fauna
22	Number of extinct, endangered, threatened/endangered/vulnerable/ endemic inland water species by group e.g. birds, aquatic mammals, invertebrates, amphibians, vascular plants, bottom fauna,
21	Macrophytes: species composition and depth distribution
20	Threatened freshwater fish species as a % total freshwater fish species known
20	Changes in fish catches by species
19	Indicator species
18	Number of exotic flora and fauna species e.g. fish, aquatic weeds
17	Changes in distribution and abundance of native flora and fauna
17	Species richness (number per unit area, number per habitat
14	Stream sediment storage and load
13	Extent of wetland drainage and filling
10	Changes in vegetation type along water courses
7	Water resource vulnerability index
7	Ratio between maximum sustained yield and actual average abundance
2	Glacier fluctuations
Parties using indicator n = 52	**Coastal and Marine Biodiversity**
22	Change in proportion of fish catches by species per specific season
17	Threatened fish species as a percentage of total fish species known
17	E.coli counts and nutrient levels as % of baseline levels
15	Lake levels and salinity
13	Shoreline position
11	Percentage coastal zone with populations exceeding 100 inhabitants/km2
11	Coral chemistry and growth pattern
9	Annual rate of mangrove conversion
9	Algae index
6	Number of large scale bottom trawling vessels per 1 000 km of coastal area
2	Surface displacement
1	Frozen ground activity
1	Amount of poison chemicals and dynamite used for reef fishing.

ANNEX 4. INDICATIVE LIST OF INDICATORS

The table of indicators on the subsequent pages has been compiled largely from the sources listed below. It is meant to provide an indicative list of indicators. Additional columns, for example on countries using specific indicators, have been omitted from the printed version but are available in the raw form of the table which may serve as a basis for discussion at the meeting of technical experts.

[2] Technical Background Document, Biodiversity Indicators, 25 August 1998.
[3] COM/AGR/CA/ENV/EPOC (98) 79; Background document for OECD workshop on agri-environmental indicators, 22-25 September 1998. By Ed van Klink.
[4] CSD working list of indicators of sustainable development, United Nations Sustainable Development, September 1996.
[5] National Institute of Statistics, CBD indicators for agricultural biological diversity in Belgium. in [6] .
[6] OECD Agri-biodiversity indicators: Background paper. Paper presented to the OECD Expert Meeting on Agri-Biodiversity Indicators, 5-8 November 2001, Zürich, Switzerland. By Kevin Parris.
[7] Global Biodiversity I, Hierarchical Indicators for Monitoring Biodiversity, p. 89.
[8] Guidelines for Monitoring and Evaluation for Biodiversity Projects, World Bank Global Environment Division, June 1998.
[9] UNEP/CBD/SBSTTA/7/12, 20 September 2001.
[10] Report of the 2nd Liaison Group Meeting on Indicators, Montreal 24-25 September 1999.
[11] Towards environmental pressure indicators for the EU: Indicator definition. Edited by P.E.M. Lammers and A.J. Gilbert, 1999.

No.	Indicator/verifier	Source	Level of biol. org			Indicator type				*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
			Ecosystem	Species	Genetic	Driver	Pressure	State	Impact	Response	Measurability	Representativeness	Reliability	Feasibility	Early warning	Agricultural biological diversity	diversity	Forest biological diversity	Inland water biological diversity	Marine and coastal biological diversity	Mountain biological diversity		
Driver indicators of agricultural biological diversity																						
2	Percentage of (near) natural vegetation cover	2	*			1					1	1		1		1	1	1				
8	Land use	2	*			1					1	1	1	1		1	1	1	1	1	Remote sensing coverage; agricultural census data on land uses	FAO recommendation
10	Use of agricultural pesticide	2	*			1					1	1		1		1					Available from national authorities and FAO	Derived from sales and expressed as active ingredients
11	Dust storms	2	*			1					1	1	1	1		1	1					
12	Frozen ground activity	2	*			1					1		1			1					1	
15	Groundwater quality (nitrates, salinity, toxicants)	2	*			1					1	1	1		1	1	1	1	1			
16	Ground water level	2	*			1					1	1	1			1	1	1			1	
17	Karst activity	2	*			1					1	1				1	1	1	1		1	
20	Slope failure (landslides)	2	*			1					1	1	1			1		1			1	
21	Soil and sediment erosion	2	*			1					1	1				1	1	1			1	
22	Soil quality	2	*			1					1	1	1	1		1	1	1			1	
Pressure indicators of agricultural biological diversity																						
41	Quantity of specimens or species of economic/scientific interest removed from the environment	2	*	*			1									1	1	1	1	1	1	
44	Erosion/loss of genetic diversity patrimony	2	*	*	*		1									1	1	1	1	1	1	

/…

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
46	Rate of change from dominance of non-domesticated to domesticated species	2	*	*		1					1	1				1	1		1				
47	Percentage of area dominated by non-domesticated species occurring in patches greater than 1000 sq. km	2	*	*		1					1	1	1	1		1							
49	Population growth and fluctuation trends of special interest species	2	*	*		1					1	1				1	1	1	1	1	1		
54	Crop types	2		*		1					1	1	1	1		1							
56	Species diversity used for food	2		*		1					1	1	1	1		1	1	1	1	1	1		
57	Stocking densities	2		*		1					1	1	1	1		1							
59	Presence of taxa indicators of environmental integrity	2		*		1					1	1	1	1		1	1	1	1	1			
61	Recorded species present (by group)	2		*		1					1	1	1	1		1	1	1	1	1			
62	Indigenous species present (by group)	2		*		1										1	1	1	1	1	1		
63	Number of non-indigenous species present (by taxonomic group)	2		*		1					1	1	1	1		1	1	1	1	1	1		
65	Change of number of species (species richness) over time (increase/decrease)	2		*		1										1	1	1	1	1			
66	Change of composition of species over time	2		*		1										1	1	1	1	1			
68	Species with smaller population size vs larger population size	2		*		1					1	1				1	1	1	1	1			
69	Spatial differences in the number of rare vs common species	2		*		1					1	1				1	1	1	1	1			
70	Spatial differences in the number of restricted vs wide-range species	2		*		1					1	1				1	1	1	1	1			
71	Representativeness of intraspecific variability of endangered and economically important species	2		*		1					1	1	1	1		1	1	1	1	1			
73	Percentage change of number of native species of grasses and herbs	2		*		1					1	1	1	1		1	1	1					
74	Diversity of native fauna	2		*		1										1	1	1	1	1			
75	Species richness (number, number per unit area, number per habitat type)	2		*	*	1										1	1	1	1	1	1		
77	Number of species in taxonomic group threatened with extirpation	2		*	*	1					1	1	1	1		1	1	1	1	1	1		
78	Number of endemic species in taxonomic group threatened with extinction	2		*	*	1					1	1	1	1		1	1	1	1	1			
79	Species risk index	2		*	*	1										1	1	1	1	1			
80	Species with stable or increasing populations	2		*	*	1										1	1	1	1	1			

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	(number or percent)																						
81	Species with decreasing populations (number or percent)	2		*	*	1										1	1	1	1	1			
84	Number of threatened species in taxonomic groups in *ex situ* collections	2		*	*	1					1	1	1	1		1	1	1	1	1			
85	Number of threatened species in taxonomic group with viable *ex situ* populations	2		*	*	1					1	1	1	1		1	1	1	1	1			
87	Heterozygosity for the most used plant species for food	2			*	1					1	1	1	1		1							
State indicators of agricultural biological diversity																							
94	Inbreeding/outbreeding rate	2			*		1									1							
95	Rate of genetic interchange between populations (measured by rate of dispersal and subsequent reproduction of migrants)	2			*		1									1							
96	Number of crops under cultivation (>100 ha)	3			*		1				1	1	1	1		1							
97	Number of rare/minor crops under cultivation (>100 ha)	3			*		1				1	1	1	1		1							
98	Acreage of each crop	3			*		1				1	1	1	1		1							
99	Number of cultivars per crop	3			*		1				1	1	1	1		1							
100	Acreage of each cultivar in a given year or period	3			*		1				1	1	1			1							
101	Number of animal species	3			*		1				1	1	1	1		1							
102	Number of rare animal species	3			*		1				1	1				1							
103	Number of animal breeds (richness)	3			*		1				1	1				1							
104	Number of heads per breed (abundance)	3			*		1				1	1				1							
105	Diversity between breeds	3			*		1				1					1							
106	Number/size rare breed collections	3			*		1				1	1	1	1		1							
107	Number of wild relatives of cultivated species	3			*		1				1	1	1	1		1							
108	Number of threatened or extinct wild relatives or weedy species	3			*		1				1	1	1	1		1							
109	Distribution of species	3			*		1				1					1							
110	Ecosystem/habitat quantity (change/loss in area, percent of total country)	3			*		1				1	1				1							
111	Ecosystem quality (composition; function; change of variable from baseline to current state; species richness or ecosystem structure;	3			*		1									1							

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	*Suitability*				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
	fragmentation)																						
112	Change of sum of all recognized varieties/breeds over time (1, 5, ten year periods)	3			*			1			1	1	1	1		1							
113	Change of share of different livestock breeds/plant varieties of total population or total production over time	3			*			1			1	1				1							
114	Number of crops conserved (semen, ova, embryos, somatic cells)	3			*			1			1	1	1	1		1							
115	Structure of the collection of PGR (characterisation; evaluation)	3			*			1								1							
116	Number of accessions per PGR crop	3			*			1			1	1	1	1		1							
117	Genetic variation in PGR collection (molecular genetic techniques)	3	*					1			1	1	1			1							
118	Accessibility and reliability of PGR material	3	*					1			1					1							
119	Number of threatened or extinct species of given taxonomic group per country	3	*					1			1	1	1	1		1							
120	Number of threatened agro-ecosystem types as percent of total country	3	*					1			1	1	1	1		1							
121	Change of number of wild species e.g. over ten years	3	*					1			1	1	1	1		1							
122	Net change of endangered species (number of species less danger - number of species more danger)	3	*					1			1					1							
123	Population trends of selected endangered species	3	*					1			1	1	1	1		1							
124	Funding of conservation and sustainable use at national level	3	*	*	*			1			1	1		1		1							
125	Implementation of international standards at national levels	3	*	*	*			1								1							
126	Development and application of methods/strategies to conserve and ensure sustainable use (collection; regeneration; storage practices; storage facilities)	3	*	*	*			1			1	1				1							
127	International cooperation	3	*	*	*			1								1							
128	International responsibility e.g. *ex situ* conservation of genetic resources; *in situ* in protected areas/on farm	3	*	*	*			1								1							

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	Suitability				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
129	Establishment and accessibility of documentation systems	3	*	*	*			1								1							
132	Net population migration rate	4						1			1	1	1			1	1	1	1	1			
133	Total fertility rate	4						1			1	1	1	1		1	1	1	1	1			
134	Population density	4						1			1	1	1	1		1	1	1	1	1			
135	Rate of growth of urban population	4						1			1	1		1		1	1	1	1	1			
136	Percent of population in urban areas	4						1			1	1	1	1		1	1	1	1	1			
137	Share of natural-resource intensive industries in manufacturing value added [?]	4						1								1	1	1	1	1			
138	Environmental protection expenditures as a percent of GDP	4						1			1	1		1		1	1	1	1	1			
151	Land use change	4						1			1	1				1	1	1					
152	Changes in land condition	4						1								1	1	1					
153	Decentralized local-level natural resource management	4						1								1	1	1	1	1			
154	National monthly rainfall index	4						1			1	1		1		1	1	1	1				
155	Satellite derived vegetation index	4						1			1	1				1	1	1					
156	Area of land affected by desertification	4						1			1	1				1	1	1					
160	Use of agricultural pesticides	4						1								1			1	1			
161	Use of fertilizers	4						1								1			1	1			
162	Arable land per capita	4						1			1	1	1	1		1							
163	Area affected by salinisation and waterlogging	4						1			1	1	1			1							
168	Threatened species as a percent of total native species	4						1			1	1	1			1	1	1	1	1			
170	Emissions of greenhouse gases	4,11						1			1	1	1			1	1	1	1				CO2, CH4, N2O, NMVOC, CO, Nox, CFC, SO2, HCFC, CF emissions
171	Emissions of sulphur oxides	4						1			1	1	1			1	1	1	1				
172	Emissions of nitrogen oxides	4						1			1	1	1			1	1	1	1				
173	Consumption of ozone depleting substances (Chlorofluorocarbons, Halons, chlorinated carbons, HFCFCs))	4,11						1			1	1	1	1		1	1	1	1				Chlorofluorocarbons: CFs, CF2Cl2 (CFC-12), CFCl3 (CFC11), CF2ClCF2Cl (CFC-114), CF3CF2Cl (CFC-115), C3FCl7 to C3F7Cl (CFC-211 to CFC-217), CF3Cl (CFC-111), CFCl2CFCl2 (CFC-112), CF2ClCFCl2 (CFC-113); Halons: CF2ClBr (halon-1211), CF3Br (halon-1301), CF3CFBr2 (halon-2402); Chlorinated carbons: CCl4), CH3CCl3;

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
																							HCHCs: CHF2Cl (HCFC-22), CH2FCl (HCFC-31), CHFCl2 (HCFC-21); Methyl bromide: CH3Br
174	Ambient concentrations of pollutants in urban areas	4,11						1			1	1	1	1		1	1	1	1				CO2, SO2, Nox, PM10, VOC, Pb
175	Expenditure on air pollution abatement	4						1			1		1	1		1	1	1	1				
176	Existence of national biosafety regulations or guidelines	4						1			1					1			1	1			
177	Chemically induced acute poisonings of humans	4						1			1					1		1	1				
178	Number of chemicals banned or severly restricted	4						1			1					1		1	1				
179	Generation of radioactive wastes	4			*			1			1	1	1	1		1	1	1	1	1			
180	Sustainable development strategies	4						1								1	1						
181	Programmes of integrated environmental and economic accounting	4						1			1			1		1		1					
183	Scientists and engineers engaged in research and development per million population	4						1			1					1	1	1	1	1			
184	Implementation of ratified global agreements	4						1								1	1	1	1	1			
185	Programmes for national environmental statistics	4						1								1	1	1	1	1			
186	Agricultural area per crops (cereal, oil crops, forage, woodlands)	5	*					1			1	1	1	1		1							
187	Agricultural area (intensively farmed, semi-intensively farmed and uncultivated)	5	*					1			1	1	1	1		1							
188	Change of area of agricultural land (conversion to or from agriculture)	5	*					1			1	1	1	1		1							
189	Use of pesticides	5	*					1			1					1							
190	Use of fertilizers	5	*					1			1					1							
191	Afforestation of agricultural land (excluding hedges)	5	*					1			1	1	1	1		1							
192	Number of species threatened by agriculture by group (e.g. birds, mammals, vascular plants, vertebrates, invertebrates)	5		*				1			1	1	1	1		1							
193	Number of vertebrate or invertebrate species using agricultural habitat	5		*				1			1	1	1	1		1							
194	Diversity and abundance of arthropods and earthworms in cultivated arable land	5		*				1			1	1	1			1							
195	Rate of chance from dominance of non-domesticated species to domesticated species	5		*				1			1	1				1							

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
196	Species diversity used for food	5		*				1			1	1	1	1		1							
197	Erosion/loss of genetic patrimony	5		*				1			1					1							
198	Accessions of crops and livestock in *ex situ* storage (number or percent)	5			*			1			1	1	1	1		1							
199	Accessions of crops regenerated in the past decade (percent)	5			*			1			1	1	1	1		1							
200	Crops (livestock) grown as a percentage of number 30 years before	5		*				1			1	1		1		1							
201	Replacement of land races with few imported ones (animals)	5			*			1			1	1		1		1							
202	Replacement of indigenous crops	5			*			1								1							
Impact indicators of agricultural biological diversity																							
23	Streamflow: velocity, volume per time etc. specify seasonality	2	*						1		1	1	1			1		1	1		1		
25	Surface displacement	2	*						1		1	1				1	1	1			1		
26	Volcanic unrest: area newly covered by lava;area newly covered by ashes	2	*						1		1	1	1	1		1		1			1		
27	Total area of a particular habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
28	Size of largest block of each habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
29	Mean nearest distance between blocks of a particular habitat type	2	*						1		1	1	1			1	1	1	1	1	1		
30	Average width of break in an identified habitat corridor	2	*						1							1	1	1	1	1	1		
33	Number and distribution of keystone or indicator species	2	*	*					1		1	1	1			1	1	1	1	1	1		
35	Change of presence, location, area, number of invasive plant or animal species	2	*	*					1		1	1	1			1	1	1	1	1	1		
39	Livestock levels per sq. km	2	*						1		1	1		1		1	1	1			1		
40	Number of introduced species and genomes	2	*	*					1		1	1				1	1	1	1	1	1		
90	Accessions of crops and livestock regenerated in the past decade (percent)	2			*				1		1	1	1	1		1							
91	Crops (livestock) grown as a percentage of number 30 years before	2			*				1		1	1	1	1		1							
205	Rate of genetic interchange between populations (measured by rate of dispersal and subsequent reproduction of migrants)	5			*				1							1							

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
206	Number of key livestock breeds (native endangered, native not endangered, non-native)	6		*					1		1	1	1	1		1							
207	Share of the three major livestock breeds (additional information: native, non-native breeds)	6		*					1		1	1	1			1							
208	Native breed's population size and status of endangerment	6		*					1		1	1				1							
209	Application of high-selective breeding methods	6		*					1		1					1							
210	Number of breeder's associations (new)	6		*					1		1					1							
211	Number of crop species in agricultural use (new)	6		*					1		1	1	1	1		1							
212	Crop species ratio / diversity index (new)	6		*					1		1					1							
213	Number of key crop varieties (domestic, non-domestic)	6		*					1		1	1	1	1		1							
214	Share of the three major crop varieties in seed production area / diversity index	6		*					1		1	1	1	1		1							
215	Share of genetically heterogenous and homgenous varieties (new)	6		*					1		1					1							
216	Share of varieties with and without 'evolutionary potential' (new)	6		*					1		1					1							
217	Number of breeders per crop	6			*				1		1					1							
225	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	7		*					1		1	1	1	1		1	1	1	1	1	1		
268	Change of total area of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
269	Change of area of largest block of a particular habitat type	8	*						1		1	1	1	1		1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
270	Change of average size of a particular habitat type	8	*						1		1	1	1			1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
271	Change of mean nearest distance between blocks of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
272	Change of average width of break in an identified habitat corridor	8	*						1							1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
273	Change of number or total area of protected areas	8	*						1		1	1	1	1		1	1	1	1	1	1	Spatial plans	GIS or overlay maps
274	Change of total area of land uses compatible with biodiversity conservation in the monitoring	8	*						1							1	1	1	1	1	1	Area of identified compatible land uses	Remote sensing data or field reports. Land use maps are likely to be available from other

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability					EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R							AG	DL	FO	IW	MC	Mt		
	area																							agencies
278	Change of number of keystone or indicator species	8	*						1		1	1	1	1	1		1	1	1			1	Transect or wide area survey results	Survey of transects or sites, frequency depends on the species involved
279	Change of limiting factors for key species, e.g. nest holes for parrots, fruit bat roosting trees	8	*						1		1	1	1	1	1		1	1	1			1	Numbers, or presence/absence depends on the factors involved	Transects, quadrats, general observations
281	Changes in frequency of events such as landslips	8	*						1		1	1	1	1			1	1	1			1	Patrol reports, aerial surveys, remote sensing	Incorporate into patrol reporting. Carry out specific surveys for identified events.
Response indicators of agricultural biological diversity																								
88	Ratio between observed and expected heterozygosity (H) for most valuable commercial tree species or one endangered tree sp.	2			*					1	1	1	1	1			1							
89	Accessions of crops and livestock in *ex situ* storage (number or percent)	2			*					1	1	1	1	1			1							
93	Coefficient of kinship or parentage of crops	2			*					1	1	1			1		1							
203	Coefficient of kinship or parentage of crops	5			*					1	1	1	1	1			1							
204	Inbreeding/outbreeding rate	5			*					1							1							
287	Amount of designated resource harvested per unit effort	8		*						1	1	1	1		1		1	1	1	1	1	1	Amount of resource harvested per unit effort.	Community, sub-group of community or nominated individuals keep records.
291	Proportion of income derived from uncultivated biodiversity resources	8	*							1	1	1					1	1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
337	Native vegetation fragmentation	10								1	1	1					1	1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
341	Size of agricultural land under irrigation	10								1	1	1	1	1			1						Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
352	Number of endemic, threatened/endangered/vulnerable species by taxonomic group	9	*							1	1	1	1	1			1	1	1	1	1	1		
354	Number of threatened mammal, bird, fish, and reptile species	9	*							1	1	1	1	1			1	1	1	1	1	1		
355	Number of endangered mammal, bird, fish, and reptile species	9	*							1	1	1	1	1			1	1	1	1	1	1		
357	NGOs programmes and action plans	9	*							1							1	1	1	1	1	1		
361	Alien species of all indigenous species (percent)	9	*							1	1						1	1	1	1	1	1		
368	Per capita wood consumption	9	*							1							1	1	1			1		
392	Existence of procedures for identifying	9		*						1	1						1	1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	Suitability				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
	endangered, rare, and threatened species																						
431	Share of irrigated agricultural land	9	*							1	1					1							
432	Arable land per capita	9	*							1						1							
433	Percentage of agricultural land under exploitation	9	*							1	1	1		1		1							
434	Replacement of land races with few imported ones	9	*							1						1							
435	Use of fertilizers	9	*							1						1							
483	Amount of animal waste, NH3 emissions	*	*							1	1	1	1	1		1	1	1	1		1		NH3
485	Loss of corridor elements in rural areas	11	*							1	1	1	1	1		1	1						
494	Subventions to agricultural production	*	*							1	1	1	1	1		1							
495	Food donations	*	*							1	1	1	1	1		1							
496	WTO agreements affecting crop choices	*	*							1	1	1	1	1		1							
Driver indicators of dry and sub-humid land biological diversity																							
132	Net population migration rate	4				1					1	1	1			1	1	1	1	1			
133	Total fertility rate	4				1					1	1	1	1		1	1	1	1	1			
135	Rate of growth of urban population	4				1					1	1		1		1	1	1	1	1			
137	Share of natural-resource intensive industries in manufacturing value added [?]	4				1										1	1	1	1	1			
151	Land use change	4				1					1	1				1	1	1					
164	Wood harvesting intensity	4				1					1	1					1	1					
179	Generation of radioactive wastes	4			*	1					1	1	1	1		1	1	1	1	1			
289	Change of total human population inside and around (e.g. within 20 km) conservation areas	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
290	Demographic factors (age structure, settlement patterns, education levels, etc.) of relevant human population in or around conservation area	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
292	Change of proportion of income derived from alternative livelihood activities	8	*			1					1						1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
293	Change of resource consumption for household use vs. marketing	8	*			1					1	1					1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
294	Change of rate of consumption of biodiversity resources by different groups (e.g. local communities vs. outside interests)	8	*			1											1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
295	Change of number or percent of people	8	*			1					1						1	1	1	1	1	Survey returns, management records, market	Participatory techniques (RRA, PRA, etc.) and

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	harvesting biodiversity resources																					surveys	other socio-economic survey techniques, possibly every two or three years.
296	Change of levels of exploitation toward or away from sustainable use	8	*			1					1						1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
Pressure indicators of dry and sub-humid land biological diversity																							
7	Forest area change	2	*			1					1	1		1			1	1		1		National authorities and FAO	From national forest inventories, sampling ground surveys; cadastral surveys, remote sensing and a combination of these
8	Land use	2	*			1					1	1	1	1		1	1	1	1	1		Remote sensing coverage; agricultural census data on land uses	FAO recommendation
11	Dust storms	2	*			1					1	1	1	1		1	1						
16	Ground water level	2	*			1					1	1	1			1	1	1			1		
17	Karst activity	2	*			1					1	1				1	1	1	1		1		
21	Soil and sediment erosion	2	*			1					1	1				1	1	1			1		
35	Change of presence, location, area, number of invasive plant or animal species	2	*	*		1					1	1	1			1	1	1	1	1	1		
56	Species diversity used for food	2		*		1					1	1	1	1		1	1	1	1	1	1		
86	Species used by local residents	2		*	*	1					1	1					1	1	1	1	1		
134	Population density	4				1					1	1	1	1		1	1	1	1	1			
170	Emissions of greenhouse gases	4,11				1					1	1	1			1	1	1	1				CO2, CH4, N2O, NMVOC, CO, Nox, CFC, SO2, HCFC, CF emissions
171	Emissions of sulphur oxides	4				1					1	1	1			1	1	1	1				
172	Emissions of nitrogen oxides	4				1					1	1	1			1	1	1	1				
173	Consumption of ozone depleting substances (Chlorofluorocarbons, Halons, chlorinated carbons, HFCFCs))	4,11				1					1	1	1	1		1	1	1	1				Chlorofluorocarbons: CFs, CF2Cl2 (CFC-12), CFCl3 (CFC11), CF2ClCF2Cl (CFC-114), CF3CF2Cl (CFC-115), C3FCl7 to C3F7Cl (CFC-211 to CFC-217), CF3Cl (CFC-111), CFCl2CFCl2 (CFC-112), CF2ClCFCl2 (CFC-113); Halons: CF2ClBr (halon-1211), CF3Br (halon-1301), CF3CFBr2 (halon-2402); Chlorinated carbons: CCl4), CH3CCl3; HCHCs: CHF2Cl (HCFC-22), CH2FCl (HCFC-31), CHFCl2 (HCFC-21); Methyl bromide: CH3Br
174	Ambient concentrations of pollutants in urban areas	4,11				1					1	1	1	1		1	1	1	1				CO2, SO2, Nox, PM10, VOC, Pb

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	*Suitability*				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
291	Proportion of income derived from uncultivated biodiversity resources	8	*			1					1	1				1	1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
330	Rate of encroachment into PAs	8	*			1					1	1	1				1	1	1	1	1	Remote sensing data, field reports, land use data.	Remote sensing, aerial survey, map overlays, GIS should be repeated every two to five years.
368	Per capita wood consumption	9	*			1										1	1	1			1		
483	Amount of animal waste, NH3 emissions	*	*			1					1	1	1	1		1	1	1	1		1		NH3
484	Dryland habitat change through irrigation	11	*			1					1	1	1	1			1						
485	Loss of corridor elements in rural areas	11	*			1					1	1	1	1		1	1						
486	Surface disposal of mine deposits	11	*			1					1	1	1	1			1	1	1	1			
487	Trade records	*			*	1					1	1	1	1			1	1	1	1	1		
492	Ore extraction	11	*			1					1	1	1	1			1	1	1	1			
State indicators of dry and sub-humid land biological diversity																							
2	Percentage of (near) natural vegetation cover	2	*				1				1	1		1		1	1	1					
15	Groundwater quality (nitrates, salinity, toxicants)	2	*				1				1	1	1		1	1	1	1	1				
22	Soil quality	2	*				1				1	1	1	1		1	1	1			1		
34	Limiting factors for key species, e.g. nest holes for parrots, fruit bat roosting trees	2	*	*			1				1	1	1	1			1	1	1	1	1		
37	Relative wilderness index	2	*				1										1	1		1			
45	Percentage of area dominated by non-domesticated species	2	*	*			1				1	1	1	1			1	1					
48	Percentage of area in strictly protected status	2	*	*			1				1	1	1	1			1	1	1	1	1		
51	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	2		*			1				1	1					1	1	1	1	1		
52	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals)	2		*			1				1	1					1	1	1	1	1		
59	Presence of taxa indicators of environmental integrity	2		*			1				1	1	1	1		1	1	1	1	1			
60	Degree of connectivity of food webs	2		*			1				1	1					1	1	1	1			
61	Recorded species present (by group)	2		*			1				1	1	1	1		1	1	1	1	1			
62	Indigenous species present (by group)	2		*			1									1	1	1	1	1	1		
64	Number of endemic species per taxonomic group	2		*			1				1	1	1	1			1	1	1	1	1		
66	Change of composition of species over time	2		*			1									1	1	1	1	1			

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						*AG*	*DL*	*FO*	*IW*	*MC*	*Mt*		
69	Spatial differences in the number of rare vs common species	2		*				1			1	1				1	1	1	1	1			
70	Spatial differences in the number of restricted vs wide-range species	2		*				1			1	1				1	1	1	1	1			
71	Representativeness of intraspecific variability of endangered and economically important species	2		*				1			1	1	1	1		1	1	1	1	1			
72	Threatened tree species as a percentage of the 20 most used for commercial purposes	2		*				1			1	1	1	1			1	1					
74	Diversity of native fauna	2		*				1								1	1	1	1	1			
75	Species richness (number, number per unit area, number per habitat type)	2		*	*			1								1	1	1	1	1	1		
130	Natural capital index framework	3	*					1			1	1	1	1			1	1	1	1	1	Sum (percent agro-ecosystem quantity * percent agro-ecosystem quality)	For example four quality variables measured as percent of baseline, e.g. (70%+20%+0%+30%)/4=30% multiplied with percent ecosystem type of total national area and summed up for different types
136	Percent of population in urban areas	4						1			1	1	1	1		1	1	1	1	1			
152	Changes in land condition	4						1								1	1	1					
154	National monthly rainfall index	4						1			1	1		1		1	1	1	1				
155	Satellite derived vegetation index	4						1			1	1				1	1	1					
156	Area of land affected by desertification	4						1			1	1				1	1	1					
168	Threatened species as a percent of total native species	4						1			1	1	1			1	1	1	1	1			
225	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	7		*				1			1	1	1	1		1	1	1	1	1	1		
226	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals)	7		*				1									1	1	1	1			
227	Distribution and dispersion of special interets species across the region	7		*				1			1						1	1	1	1			
228	Population growth and fluctuation trends of special interest species	7		*				1			1	1	1				1	1	1	1			
229	Fertility, fecundity, recruitment rate, survivorship, mortality rate, individual growth rate, and other individual and population health	7		*				1			1	1	1				1	1	1	1			

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						*Data sets*	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	parameters																						
230	Trends in habitat components for special interest species (varies by species)	7		*				1									1	1	1	1			
231	Trends in threats to special interest species (depends on life history and sensitivity of species in relation to land use practices and other influences)	7		*				1									1	1	1	1			
232	Identity, relative abundance, frequency, richness and evenness of species and guilds (in various habitats)	7	*					1			1						1	1	1	1			
243	Areal extent of each disturbance event (e.g. fires)	7	*					1			1						1	1					
335	Self-regenerating habitat	10						1									1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
336	Man-made habitat	10						1			1	1					1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
337	Native vegetation fragmentation	10						1			1	1				1	1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
339	Conversion of coastal areas	10						1			1	1					1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
340	Erosion	10						1			1	1				1	1	1			1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
342	Species richness	10						1									1	1	1	1	1	Natural biodiversity data base, surveys, transects, sampling reports	Monitoring and research programmes, inventories
343	Change of abundance and/or distribution of a selected core set of species	10						1			1	1	1				1	1	1	1	1	Wide area, transect, sample results	Surveys and monitoring programmes depending on the species involved
344	Threatened species as percentage of total species or certain taxonomic groups	10						1			1	1	1				1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
345	Percent endemic species threatened	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
346	Threatened species in protected areas	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
347	Replacement of indigenous crops	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent regression, DNA sequencing, electrophoresis, karyotypic analysis
348	Replacement of land races with few imported	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	ones																						regression, DNA sequencing, electrophoresis, karyotypic analysis
350	Size and distribution of protected areas according to IUCN 1-6	9	*					1									1	1	1	1	1		
352	Number of endemic, threatened/endangered/vulnerable species by taxonomic group	9	*					1			1	1	1	1		1	1	1	1	1	1		
353	Number of visitors to protected areas	9	*					1			1	1	1	1			1	1	1	1	1		
354	Number of threatened mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		
355	Number of endangered mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		
358	Percentage of protected area of different ecosystem types	9	*					1			1	1	1	1			1	1	1	1	1		
359	Species of communal interest of all indigenous species (percent)	9	*					1									1	1	1	1	1		
360	Endangered species of all indigenous species (percent)	9	*					1									1	1	1	1	1		
361	Alien species of all indigenous species (percent)	9	*					1			1					1	1	1	1	1	1		
Impact indicators of dry and sub-humid land biological diversity																							
4	Crown cover (%)	2	*						1		1	1	1				1	1			1	Canopy cover in percent at the upper canopy level	Standard canopy cover methods, possibly done seasonally, or at least annually in the same season
25	Surface displacement	2	*						1		1	1				1	1	1			1		
27	Total area of a particular habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
28	Size of largest block of each habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
29	Mean nearest distance between blocks of a particular habitat type	2	*						1		1	1	1			1	1	1	1	1	1		
33	Number and distribution of keystone or indicator species	2	*	*					1		1	1	1			1	1	1	1	1	1		
39	Livestock levels per sq. km	2	*						1		1	1		1		1	1	1			1		
40	Number of introduced species and genomes	2	*	*					1		1	1				1	1	1	1	1	1		
41	Quantity of specimens or species of economic/scientific interest removed from the environment	2	*	*					1							1	1	1	1	1	1		
43	Proportion of protected area to converted/utilized	2	*						1		1	1					1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	Suitability				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
	area																						
44	Erosion/loss of genetic diversity patrimony	2	*	*	*				1							1	1	1	1	1	1		
46	Rate of change from dominance of non-domesticated to domesticated species	2	*	*					1		1	1				1	1		1				
49	Population growth and fluctuation trends of special interest species	2	*	*					1		1	1				1	1	1	1	1	1		
55	Ratio between exotic species plantation area and native species in plantation area	2		*					1		1	1	1	1			1	1			1		
63	Number of non-indigenous species present (by taxonomic group)	2		*					1		1	1	1	1		1	1	1	1	1	1		
65	Change of number of species (species richness) over time (increase/decrease)	2		*					1							1	1	1	1	1			
67	Species groups: total number vs. threatened species	2		*					1		1	1	1	1			1	1	1	1			
68	Species with smaller population size vs larger population size	2		*					1		1	1				1	1	1	1	1			
73	Percentage change of number of native species of grasses and herbs	2		*					1		1	1	1	1		1	1	1					
77	Number of species in taxonomic group threatened with extirpation	2		*	*				1		1	1	1	1		1	1	1	1	1	1		
78	Number of endemic species in taxonomic group threatened with extinction	2		*	*				1		1	1	1	1		1	1	1	1	1			
79	Species risk index	2		*	*				1							1	1	1	1	1			
80	Species with stable or increasing populations (number or percent)	2		*	*				1							1	1	1	1	1			
81	Species with decreasing populations (number or percent)	2		*	*				1							1	1	1	1	1			
83	Number of endemic species in protected areas	2		*	*				1		1	1	1	1			1	1	1	1			
268	Change of total area of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
269	Change of area of largest block of a particular habitat type	8	*						1		1	1	1	1		1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
270	Change of average size of a particular habitat type	8	*						1		1	1	1			1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
271	Change of mean nearest distance between blocks of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
272	Change of average width of break in an identified habitat corridor	8	*						1							1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						*Data sets*	*Methodology*
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
273	Change of number or total area of protected areas	8	*						1		1	1	1	1		1	1	1	1	1	1	Spatial plans	GIS or overlay maps
274	Change of total area of land uses compatible with biodiversity conservation in the monitoring area	8	*						1							1	1	1	1	1	1	Area of identified compatible land uses	Remote sensing data or field reports. Land use maps are likely to be available from other agencies
275	Change of crown cover percent	8	*						1		1	1		1			1	1	1		1	Canopy cover in percent of upper canopy (wether tree, shrub, grass, etc.)	Standard canopy cover methods, possibly done seasonally , or at least annually in the same season
276	Change of location of habitat boundaries	8	*						1			1	1				1	1	1		1	Location of boundary in defined quadrats or transects	Long-term (possibly every two to five years) survey of sites, and/or fixed point photography
278	Change of number of keystone or indicator species	8	*						1		1	1	1	1	1	1	1	1			1	Transect or wide area survey results	Survey of transects or sites, frequency depends on the species involved
279	Change of limiting factors for key species, e.g. nest holes for parrots, fruit bat roosting trees	8	*						1		1	1	1	1	1	1	1	1			1	Numbers, or presence/absence depends on the factors involved	Transects, quadrats, general observations
281	Changes in frequency of events such as landslips	8	*						1		1	1	1	1		1	1	1			1	Patrol reports, aerial surveys, remote sensing	Incorporate into patrol reporting. Carry out specific surveys for identified events.
282	Abundance (number per taxonomic group) of key animal species	8		*					1		1	1	1	1			1	1	1	1	1	Encounter rate (e.g. sight, sound, sign) along transects. Number of individual at concentration points such as colonies or roosts. Management patrol reports	Management staff monitor transects (e.g. sections of track) on regular patrols. Regular counts at concetnration points.
285	Range of designated species (either total range or range within monitoring area)	8		*					1		1	1	1				1	1	1	1	1	Combination of sighting data and transect sign data.	National level staff combine indicator data for all relevant areas.
286	Amount of plant or animal material by species harvested in protected area	8		*					1		1	1	1		1		1	1	1	1	1	Amount of resource harvested in a defined area as recorded by the local community.	Record keeping by community or sub-group.
287	Amount of designated resource harvested per unit effort	8		*					1		1	1	1		1	1	1	1	1	1	1	Amount of resource harvested per unit effort.	Community, sub-group of community or nominated individuals keep records.
288	Number of confirmed instances of hunting and/or harvesting of designated species in a given time period	8		*					1		1	1	1	1			1	1	1	1	1	Combination of : field evidence and village and market surveys.	Information collected by management patrols, from villagers or from market traders.
Response indicators of dry and sub-humid land biological diversity																							
30	Average width of break in an identified habitat corridor	2	*							1						1	1	1	1	1	1		
31	Number or total area of protected areas	2	*							1	1	1	1	1			1	1	1	1	1		
32	Location of habitat boundaries	2	*							1	1	1					1	1	1	1	1		
84	Number of threatened species in taxonomic groups in *ex situ* collections	2		*	*					1	1	1	1	1		1	1	1	1	1			
85	Number of threatened species in taxonomic	2		*	*					1	1	1	1	1		1	1	1	1	1			

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	*Suitability*				EW	Thematic area AG	DL	FO	IW	MC	Mt	*Data sets*	Methodology
	group with viable *ex situ* populations																						
138	Environmental protection expenditures as a percent of GDP	4								1	1	1		1		1	1	1	1	1			
153	Decentralized local-level natural resource management	4								1						1	1	1	1	1			
169	Protected area as a percent of total area	4								1	1	1	1	1			1	1	1	1			
175	Expenditure on air pollution abatement	4								1	1		1	1		1	1	1	1				
180	Sustainable development strategies	4								1						1	1						
182	Mandated environmental impact assessment	4								1	1	1	1	1			1	1	1	1			
183	Scientists and engineers engaged in research and development per million population	4								1	1					1	1	1	1	1			
184	Implementation of ratified global agreements	4								1						1	1	1	1	1			
185	Programmes for national environmental statistics	4								1						1	1	1	1	1			
321	Average amount of time (person-days of protected area staff) spent in the field	8	*							1	1	1	1	1	1		1	1	1	1	1	Time sheets and fiel reports	Calcualte field time
325	Budget allocated to monitoring, or number of staff trained in monitoring	8	*							1	1	1	1				1	1	1	1	1	Results of review of budget, staffing, management systems	Review budget, staffing and management systems annually or less frequently.
326	Status of monitoring information management system	8	*							1							1	1	1	1	1	Management systems	Review of existing systems
327	Integration of biodiversity monitoring into the routine duties of field staff	8	*							1	1	1	1	1			1	1	1	1	1	Annual work programs and patrol reports	Review annual work programms and patrol reports.
328	Extent and timeliness of implementation of scheduled/planned activities	8	*							1	1	1					1	1	1	1	1	Management records	Calculate wether management bodies are meeting agreed targets.
329	Number and nature of threats to site	8	*							1	1	1	1				1	1	1	1	1	Recorded evidence of unlawful activity, field reports and aerial surveys, results of threat review, new development plans.	Calculate form official reports. Carry out threat review.
331	Existence of an agreed procedure for conflict resolution on natural resource management issues	8	*							1	1						1	1	1	1	1	Project or government records, documentation of traditional resource management regime	Review records and documents, interviews.
332	Change of proportion of conflicts which are successfully resolved	8	*							1							1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.
333	Reduced conflicts over access or use rights	8	*							1	1	1					1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.
334	Degree of tolerance of wildlife on community land	8	*	*						1	1						1	1	1	1	1	Community and management records.	Review records, carry out interviews and PRA.
349	Existence of institutional capacity, policy and regulatory framework for the planning, management and conservation of biological	9	*							1	1	1	1	1			1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	diversity																						
356	International conventions acceeded to	9	*							1	1						1	1	1	1	1		
357	NGOs programmes and action plans	9	*							1						1	1	1	1	1	1		
362	Endangered species with plans of action (all categories of endangerment, and all types of plans of action)	9	*							1	1			1			1	1	1	1	1		
392	Existence of procedures for identifying endangered, rare, and threatened species	9		*						1	1					1	1	1	1	1	1		
Driver indicators of forest biological diversity																							
132	Net population migration rate	4				1					1	1	1			1	1	1	1	1			
133	Total fertility rate	4				1					1	1	1	1		1	1	1	1	1			
135	Rate of growth of urban population	4				1					1	1		1		1	1	1	1	1			
137	Share of natural-resource intensive industries in manufacturing value added [?]	4				1										1	1	1	1	1			
151	Land use change	4				1					1	1				1	1	1					
164	Wood harvesting intensity	4				1					1	1					1	1					
179	Generation of radioactive wastes	4			*	1					1	1	1	1		1	1	1	1	1			
289	Change of total human population inside and around (e.g. within 20 km) conservation areas	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
290	Demographic factors (age structure, settlement patterns, education levels, etc.) of relevant human population in or around conservation area	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
292	Change of proportion of income derived from alternative livelihood activities	8	*			1					1						1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
293	Change of resource consumption for household use vs. marketing	8	*			1					1	1					1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
294	Change of rate of consumption of biodiversity resources by different groups (e.g. local communities vs. outside interests)	8	*			1											1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
295	Change of number or percent of people harvesting biodiversity resources	8	*			1					1						1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
296	Change of levels of exploitation toward or away from sustainable use	8	*			1					1						1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques,

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	Suitability				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
																							possibly every two or three years.
297	Change of number or percent of people engaging in alternative livelihood activities	8	*			1					1							1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
298	Change of number and/or nature (full time, seasonal, etc.) of community members employed in project and related activities	8	*			1					1	1						1	1	1	1	Project reports, project employment records.	Examine reports and ecords every one or two years.
324	Change of level of understanding of biodiversity concepts and conservation objectives	8	*			1												1	1	1	1	Results of structured interviews/questionnaires	Structured interviews and/or questionnaires
393	Existing strategies for *in situ*/*ex situ* conservation of genetic variation within commercial, endangered, rare and threatened species of forest flora and fauna	9		*		1												1					
Pressure indicators of forest biological diversity																							
330	Rate of encroachment into PAs	8	*			1					1	1	1				1	1	1	1	1	Remote sensing data, field reports, land use data.	Remote sensing, aerial survey, map overlays, GIS should be repeated every two to five years.
368	Per capita wood consumption	9	*			1										1	1	1			1		
376	Annual volume and area of timber harvested - indigenous and plantation	9	*			1					1			1				1					
377	Contribution of forest sector to gross domestic product	9	*			1												1					
387	Managed forest ratio	9	*			1												1					
408	Forest protection rate	9		*		1												1					
409	Burnt forest area per year	9	*			1					1	1	1	1				1					
410	Rate of vegetation clearing by activity (agriculture, urban development, logging, mining, harvesting for subsistence)	9		*		1					1	1	1	1				1					
483	Amount of animal waste, NH3 emissions	*	*			1					1	1	1	1		1	1	1	1		1		NH3
486	Surface disposal of mine deposits	11	*			1					1	1	1	1			1	1	1	1			
487	Trade records	*			*	1					1	1	1	1			1	1	1	1	1		
492	Ore extraction	11	*			1					1	1	1	1			1	1	1	1			
State indicators of forest biological diversity																							
2	Percentage of (near) natural vegetation cover	2	*				1				1	1		1		1	1	1					
15	Groundwater quality (nitrates, salinity, toxicants)	2	*				1				1	1	1		1	1	1	1	1				
22	Soil quality	2	*				1				1	1	1	1		1	1	1			1		
24	Stream sediment storage and load	2	*				1				1	1	1					1	1				
34	Limiting factors for key species, e.g. nest holes	2	*	*			1				1	1	1	1			1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	for parrots, fruit bat roosting trees																						
37	Relative wilderness index	2	*					1									1	1		1			
45	Percentage of area dominated by non-domesticated species	2	*	*				1			1	1	1	1			1	1					
48	Percentage of area in strictly protected status	2	*	*				1			1	1	1	1			1	1	1	1	1		
51	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	2		*				1			1	1					1	1	1	1	1		
52	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals)	2		*				1			1	1					1	1	1	1	1		
59	Presence of taxa indicators of environmental integrity	2		*				1			1	1	1	1		1	1	1	1	1			
60	Degree of connectivity of food webs	2		*				1			1	1					1	1	1	1			
61	Recorded species present (by group)	2		*				1			1	1	1	1		1	1	1	1	1			
62	Indigenous species present (by group)	2		*				1								1	1	1	1	1	1		
64	Number of endemic species per taxonomic group	2		*				1			1	1	1	1			1	1	1	1	1		
66	Change of composition of species over time	2		*				1								1	1	1	1	1			
69	Spatial differences in the number of rare vs common species	2		*				1			1	1				1	1	1	1	1			
70	Spatial differences in the number of restricted vs wide-range species	2		*				1			1	1				1	1	1	1	1			
71	Representativeness of intraspecific variability of endangered and economically important species	2		*				1			1	1	1	1		1	1	1	1	1			
72	Threatened tree species as a percentage of the 20 most used for commercial purposes	2		*				1			1	1	1	1			1	1					
74	Diversity of native fauna	2		*				1								1	1	1	1	1			
75	Species richness (number, number per unit area, number per habitat type)	2		*	*			1								1	1	1	1	1	1		
130	Natural capital index framework	3	*					1			1	1	1	1			1	1	1	1	1	Sum (percent agro-ecosystem quantity * percent agro-ecosystem quality)	For example four quality variables measured as percent of baseline, e.g. (70%+20%+0%+30%)/4=30% multiplied with percent ecosystem type of total national area and summed up for different types
136	Percent of population in urban areas	4						1			1	1	1	1		1	1	1	1	1			

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	*Suitability*				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
152	Changes in land condition	4						1								1	1	1					
154	National monthly rainfall index	4						1			1	1		1		1	1	1	1				
155	Satellite derived vegetation index	4						1			1	1				1	1	1					
156	Area of land affected by desertification	4						1			1	1				1	1	1					
165	Forest area change	4						1			1	1						1					
168	Threatened species as a percent of total native species	4						1			1	1	1			1	1	1	1	1			
218	Allelic diversity	7			*			1			1							1					
219	Presence/absence of rare alleles	7			*			1			1	1	1					1					
220	Heterozygosity	7			*			1			1	1	1					1					
221	Phenotypic polymorphism	7			*			1			1							1					
222	Symptoms of inbreeding depression or genetic drift (reduced survivorship or fertility, abnormal sperm, reduced resistance to disease, morphological abnormalities or asymmetries)	7			*			1			1	1		1				1					
223	Inbreeding/outbreeding rate	7			*			1										1					
224	Rate of genetic interchange between populations (measured by rate of dispersal and subsequent reproduction of migrants)	7			*			1										1					
225	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	7		*				1			1	1	1	1		1	1	1	1	1	1		
226	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals)	7		*				1									1	1	1	1			
227	Distribution and dispersion of special interets species across the region	7		*				1			1						1	1	1	1			
228	Population growth and fluctuation trends of special interest species	7		*				1			1	1	1				1	1	1	1			
229	Fertility, fecundity, recruitment rate, survivorship, mortality rate, individual growth rate, and other individual and population health parameters	7		*				1			1	1	1				1	1	1	1			
230	Trends in habitat components for special interest species (varies by species)	7		*				1									1	1	1	1			
231	Trends in threats to special interest species (depends on life history and sensitivity of	7		*				1									1	1	1	1			

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	species in relation to land use practices and other influences)																						
232	Identity, relative abundance, frequency, richness and evenness of species and guilds (in various habitats)	7	*					1			1						1	1	1	1			
233	Diversity of tree ages or sizes in community (or stand)	7	*					1			1							1					
234	Ratio of exotic species to native species in community (species richness, cover and biomass)	7	*					1			1							1					
235	Proportions of endemic, threatened, and endangered species	7	*					1			1							1					
236	Frequency distribution of seral stages (age classes) for each forest type and across all types	7	*					1			1	1	1					1					
237	Average and range of tree ages within defined seral stages	7	*					1			1							1					
238	Ratio of area of natural forest of all ages to area in clear-cuts and plantations	7	*					1			1	1	1	1				1					
239	Abundance and diversity of snags, downed logs, and other defined structural elements in various size and decay classes	7	*					1			1							1					
240	Spatial dispersion of structural elements and patches	7	*					1			1							1					
241	Foliage density and layering (profiles) and horizontal diversity of foliage profiles in stand	7	*					1			1							1					
242	Canopy density and size, dispersion of canopy openings	7	*					1			1	1	1	1				1					
243	Areal extent of each disturbance event (e.g. fires)	7	*					1			1						1	1					
244	Frequency, intensity, return interval, and rotation period of fires and other natural and anthropogenic disturbances	7	*					1			1							1					
245	Cycling rates for various key nutrients (e.g. N, P)	7	*					1			1		1					1					
246	Intensity and severity of disturbance events (including fires)	7	*					1			1	1	1	1				1					

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area							Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt			
247	Seasonality or periodicity of disturbances	7	*					1			1	1	1	1				1						
248	Predictability or variability of disturbances	7	*					1										1						
249	Human intrusion rates and intensities	7	*					1			1							1						
250	Identity, distribution, richness, and proportions of patch types (such as forest types and seral stages) across the landscape	7	*					1			1							1						
251	Area of late successional forest interior habitat	7	*					1			1	1	1	1				1						
252	Total amount of forest patch perimeter and edge zone	7	*					1			1							1						
253	Patch size frequency distribution for each seral stage and forest type, and across all stages and types	7	*					1			1							1						
254	Patch size diversity index	7	*					1			1							1						
255	Size frequency distribution of late successional interior forest patches (minus defined edge zone, usually 100-200 m)	7	*					1			1	1	1					1						
256	Forest patch perimeter: area ratio	7	*					1			1	1	1	1				1						
257	Edge zone:interior zone ratio	7	*					1			1							1						
258	Fractal dimension	7	*					1			1							1						
259	Patch shape indices	7	*					1			1							1						
260	Patch density	7	*					1			1							1						
261	Fragmentation indices	7	*					1			1							1						
262	Interpatch distance (mean, median, range) for all forest patches and for late successional forest patches	7	*					1			1							1						
263	Juxtaposition measures (percentage of area within a defined distance from patch occupied by different habitat types, length of patch border adjacent to different habitat types)	7	*					1			1							1						
264	Structural contrast (magnitude of difference between adjacent habitats, measured for various structural attributes)	7	*					1			1							1						
265	Road density for different classes of road and all road classes combined	7	*					1			1	1						1						
266	Disturbance indicators (see above)	7	*					1										1						
267	Rates of nutrient, energy, and biological transfer between different communities and patches in	7	*					1										1						

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	the landscape																						
335	Self-regenerating habitat	10						1									1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
336	Man-made habitat	10						1			1	1					1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
337	Native vegetation fragmentation	10						1			1	1				1	1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
338	Wetland drainage and filling	10						1			1	1		1				1	1			Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
339	Conversion of coastal areas	10						1			1	1					1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
340	Erosion	10						1			1	1				1	1	1			1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
342	Species richness	10						1									1	1	1	1	1	Natural biodiversity data base, surveys, transects, sampling reports	Monitoring and research programmes, inventories
343	Change of abundance and/or distribution of a selected core set of species	10						1			1	1	1				1	1	1	1	1	Wide area, transect, sample results	Surveys and monitoring programmes depending on the species involved
344	Threatened species as percentage of total species or certain taxonomic groups	10						1			1	1	1				1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
345	Percent endemic species threatened	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
346	Threatened species in protected areas	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
347	Replacement of indigenous crops	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent regression, DNA sequencing, electrophoresis, karyotypic analysis
348	Replacement of land races with few imported ones	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent regression, DNA sequencing, electrophoresis, karyotypic analysis
350	Size and distribution of protected areas according to IUCN 1-6	9	*					1									1	1	1	1	1		
352	Number of endemic, threatened/endangered/vulnerable species by taxonomic group	9	*					1			1	1	1	1		1	1	1	1	1	1		
353	Number of visitors to protected areas	9	*					1			1	1	1	1			1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
354	Number of threatened mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		
355	Number of endangered mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		
358	Percentage of protected area of different ecosystem types	9	*					1			1	1	1	1			1	1	1	1	1		
359	Species of communal interest of all indigenous species (percent)	9	*					1									1	1	1	1	1		
360	Endangered species of all indigenous species (percent)	9	*					1									1	1	1	1	1		
361	Alien species of all indigenous species (percent)	9	*					1			1					1	1	1	1	1	1		
365	Total forest area	9	*					1			1	1						1					
366	Total forest area as a percentage of total land area	9	*					1			1	1						1					
367	Percentage of forest cover by forest type (primary, secondary or plantation)	9	*					1			1	1	1	1				1					
369	Self-generating area as a percentage of total area	9	*					1										1					
370	Percentage of protected area with clearly defined boundaries	9	*					1										1					
371	Area of forest managed for wood production	9	*					1			1	1	1	1				1					
372	Percentage of forest land managed for recreation and tourism to total forest area	9	*					1			1			1				1					
373	Area and percentage of forests managed for catchment protection	9	*					1			1			1				1					
374	Percentage of forest protected areas by forest type by age, class and successional stage	9	*					1										1					
375	Area and length and numbers of biological corridors	9	*					1			1							1					
378	Number and size of forest fires	9	*					1			1			1				1					
379	Reforested and afforested areas	9	*					1			1			1				1					
381	Relationship between forest cover and frequency of flooding	9	*					1			1	1	1	1				1					
385	Forest conversion affecting rare ecosystems by area	9	*					1										1					
386	Extent of mixed stands	9	*					1										1					
388	Estimate of carbon stored	9	*					1										1					
389	Number of threatened keystone, flagship species	9		*				1										1					

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
390	Number of extinct, endangered, threatened, vulnerable and endemic forest dependent species by group (e.g. birds, mammals, vertebrates, invertebrates)	9		*				1			1	1	1	1				1					
391	List of flora and fauna	9		*				1			1	1	1	1				1					
394	Number and population size of forest dependent species (e.g. birds)	9		*				1										1					
395	Population levels of representative species from diverse habitats monitored across their range	9		*				1			1	1	1					1					
396	Number and extent of invasive species	9		*				1										1					
397	Number of forest-dependent species that occupy a small portion of their former range	9		*				1			1	1	1	1				1					
399	The number of forest-dependent species	9		*				1										1					
401	Extent of area by forest type in protected area categories as defined by IUCN or other classification systems	9		*				1			1	1	1	1				1					
402	Extent of area by forest type and by age class or successional stage	9		*				1			1							1					
403	Extent of area by forest type relative to total forest area	9		*				1			1							1					
404	Area of managed forest with special environmental values	9		*				1			1	1	1	1				1					
405	Area of seed forest stands	9		*				1			1	1	1	1				1					
406	Area of forest rebuilding stands	9		*				1			1	1		1				1					
407	Forest area with revitalisation or ecological sites	9		*				1										1					
411	Outbreak of veld fires by frequency	9		*				1			1	1	1	1				1					
416	Area and state of indigenous vegetation	9		*				1										1					
417	Distribution of species considered as pests	9		*				1										1					
418	Number of exotic and local species outbred and location of affected areas	9		*				1										1					
419	Area of protected areas by vegetation type as percentage of total area	9		*				1			1	1						1					
420	Revegetated areas by species or genus in hectares per annum and reasons thereof	9		*				1			1	1		1				1					
421	Percentage of forest used by people for subsistence	9		*				1										1					

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						*Data sets*	*Methodology*
			E	S	G	D	P	S	I	R						*AG*	*DL*	*FO*	*IW*	*MC*	*Mt*		
422	Number of wild species used for subsistence (including food) by communities	9		*				1			1	1						1					
423	Number of species of crops and trees used by local residents	9		*				1			1	1						1					
424	Woodlands (sq. km)	9		*				1			1	1	1	1				1					
425	Riverine forest (sq. km)	9		*				1			1	1	1	1				1					
426	Riverine percentage of total land	9		*				1										1					
427	Mangrove forest (sq. km)	9		*				1			1	1	1	1				1					
428	Mangrove percentage of total land	9		*				1			1							1					
429	Seedlings planted annually, exotic versus indigenous	9		*				1			1	1	1	1				1					
430	Percentage of protected productive forest area of total productive area	9		*				1										1					
Impact indicators of forest biological diversity																							
4	Crown cover (%)	2	*						1		1	1	1				1	1			1	Canopy cover in percent at the upper canopy level	Standard canopy cover methods, possibly done seasonally, or at least annually in the same season
25	Surface displacement	2	*						1		1	1				1	1	1			1		
27	Total area of a particular habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
28	Size of largest block of each habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
29	Mean nearest distance between blocks of a particular habitat type	2	*						1		1	1	1			1	1	1	1	1	1		
33	Number and distribution of keystone or indicator species	2	*	*					1		1	1	1			1	1	1	1	1	1		
39	Livestock levels per sq. km	2	*						1		1	1		1		1	1	1			1		
40	Number of introduced species and genomes	2	*	*					1		1	1				1	1	1	1	1	1		
41	Quantity of specimens or species of economic/scientific interest removed from the environment	2	*	*					1							1	1	1	1	1	1		
43	Proportion of protected area to converted/utilized area	2	*						1		1	1					1	1	1	1	1		
44	Erosion/loss of genetic diversity patrimony	2	*	*	*				1							1	1	1	1	1	1		
49	Population growth and fluctuation trends of special interest species	2	*	*					1		1	1				1	1	1	1	1	1		
55	Ratio between exotic species plantation area and native species in plantation area	2		*					1		1	1	1	1			1	1			1		

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
63	Number of non-indigenous species present (by taxonomic group)	2		*					1		1	1	1	1		1	1	1	1	1	1		
65	Change of number of species (species richness) over time (increase/decrease)	2		*					1							1	1	1	1	1			
67	Species groups: total number vs. threatened species	2		*					1		1	1	1	1			1	1	1	1			
68	Species with smaller population size vs larger population size	2		*					1		1	1				1	1	1	1	1			
73	Percentage change of number of native species of grasses and herbs	2		*					1		1	1	1	1		1	1	1					
77	Number of species in taxonomic group threatened with extirpation	2		*	*				1		1	1	1	1		1	1	1	1	1	1		
78	Number of endemic species in taxonomic group threatened with extinction	2		*	*				1		1	1	1	1		1	1	1	1	1			
79	Species risk index	2		*	*				1							1	1	1	1	1			
80	Species with stable or increasing populations (number or percent)	2		*	*				1							1	1	1	1	1			
81	Species with decreasing populations (number or percent)	2		*	*				1							1	1	1	1	1			
83	Number of endemic species in protected areas	2		*	*				1		1	1	1	1			1	1	1	1			
177	Chemically induced acute poisonings of humans	4							1		1					1		1	1				
268	Change of total area of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
269	Change of area of largest block of a particular habitat type	8	*						1		1	1	1	1		1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
270	Change of average size of a particular habitat type	8	*						1		1	1	1			1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
271	Change of mean nearest distance between blocks of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
272	Change of average width of break in an identified habitat corridor	8	*						1							1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
273	Change of number or total area of protected areas	8	*						1		1	1	1	1		1	1	1	1	1	1	Spatial plans	GIS or overlay maps
274	Change of total area of land uses compatible with biodiversity conservation in the monitoring area	8	*						1							1	1	1	1	1	1	Area of identified compatible land uses	Remote sensing data or field reports. Land use maps are likely to be available from other agencies
275	Change of crown cover percent	8	*						1		1	1		1			1	1	1		1	Canopy cover in percent of upper canopy	Standard canopy cover methods, possibly done

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
																						(wether tree, shrub, grass, etc.)	seasonally , or at least annually in the same season
276	Change of location of habitat boundaries	8	*						1			1	1				1	1	1		1	Location of boundary in defined quadrats or transects	Long-term (possibly every two to five years) survey of sites, and/or fixed point photography
278	Change of number of keystone or indicator species	8	*						1		1	1	1	1	1	1	1	1			1	Transect or wide area survey results	Survey of transects or sites, frequency depends on the species involved
279	Change of limiting factors for key species, e.g. nest holes for parrots, fruit bat roosting trees	8	*						1		1	1	1	1	1	1	1	1			1	Numbers, or presence/absence depends on the factors involved	Transects, quadrats, general observations
281	Changes in frequency of events such as landslips	8	*						1		1	1	1	1		1	1	1			1	Patrol reports, aerial surveys, remote sensing	Incorporate into patrol reporting. Carry out specific surveys for identified events.
282	Abundance (number per taxonomic group) of key animal species	8		*					1		1	1	1	1			1	1	1	1	1	Encounter rate (e.g. sight, sound, sign) along transects. Number of individual at concentration points such as colonies or roosts. Management patrol reports	Management staff monitor transects (e.g. sections of track) on regular patrols. Regular counts at concetnration points.
285	Range of designated species (either total range or range within monitoring area)	8		*					1		1	1	1				1	1	1	1	1	Combination of sighting data and transect sign data.	National level staff combine indicator data for all relevant areas.
286	Amount of plant or animal material by species harvested in protected area	8		*					1		1	1	1		1		1	1	1	1	1	Amount of resource harvested in a defined area as recorded by the local community.	Record keeping by community or sub-group.
287	Amount of designated resource harvested per unit effort	8		*					1		1	1	1		1	1	1	1	1	1	1	Amount of resource harvested per unit effort.	Community, sub-group of community or nominated individuals keep records.
288	Number of confirmed instances of hunting and/or harvesting of designated species in a given time period	8		*					1		1	1	1	1			1	1	1	1	1	Combination of : field evidence and village and market surveys.	Information collected by management patrols, from villagers or from market traders.
380	Area and extent of degraded lands reclaimed through forest operations	9	*						1		1			1				1					
382	Area of stands managed for conservation and utilization of genetic resources (gene reserves, seed collection stands, etc.)	9	*						1		1	1	1	1				1					
383	Area of forest area affected by anthropogenic effects (logging, mining, harvesting for subsistence)	9	*						1		1	1	1	1				1					
384	Area of forest area affected by natural disasters (Insect attack, disease, fire and flooding)	9	*						1		1	1	1	1				1					
398	The status (threatened, rare, vulnerable, endangered, or extinct) of forest-dependent species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment)	9		*					1									1					

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability					EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R							AG	DL	FO	IW	MC	Mt		
400	Fragmentation of forest types	9		*					1										1					
412	Percentage of habitat colonized by invasive species	9		*					1		1	1							1					
413	Percentage of protected area colonized by invasive species	9		*					1		1	1							1					
414	Habitat loss by sq. km through human activities, and through natural causes	9							1		1	1	1						1					
415	Habitat loss through habitat fragmentation	9		*					1										1					
Response indicators of forest biological diversity																								
30	Average width of break in an identified habitat corridor	2	*							1							1	1	1	1	1	1		
31	Number or total area of protected areas	2	*							1	1	1	1	1				1	1	1	1	1		
32	Location of habitat boundaries	2	*							1	1	1						1	1	1	1	1		
84	Number of threatened species in taxonomic groups in *ex situ* collections	2		*	*					1	1	1	1	1			1	1	1	1	1			
85	Number of threatened species in taxonomic group with viable *ex situ* populations	2		*	*					1	1	1	1	1			1	1	1	1	1			
138	Environmental protection expenditures as a percent of GDP	4								1	1	1		1			1	1	1	1	1			
153	Decentralized local-level natural resource management	4								1							1	1	1	1	1			
166	Managed forest area ratio	4								1	1								1					
167	Protected forest area as a percent of total forest area	4								1	1	1	1	1					1					
169	Protected area as a percent of total area	4								1	1	1	1	1				1	1	1	1			
175	Expenditure on air pollution abatement	4								1	1		1	1			1	1	1	1				
178	Number of chemicals banned or severly restricted	4								1	1						1		1	1				
181	Programmes of integrated environmental and economic accounting	4								1	1			1			1		1					
182	Mandated environmental impact assessment	4								1	1	1	1	1				1	1	1	1			
183	Scientists and engineers engaged in research and development per million population	4								1	1						1	1	1	1	1			
184	Implementation of ratified global agreements	4								1							1	1	1	1	1			
185	Programmes for national environmental statistics	4								1							1	1	1	1	1			
299	Number of awareness programmes undertaken	8	*							1	1	1	1						1	1	1	1	Project reports	Annual surveys

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
300	Number of schools visited	8	*							1	1	1	1					1	1	1	1	Project reports	Annual surveys
301	Community cooperation with conservation staff (such as anti-poaching activities, monitoring)	8	*							1	1	1	1	1				1	1	1	1	Results of interviews and PRA with communities and government agency staff.	Interviews and PRA
302	Self-monitoring of resource by users	8	*							1	1	1	1					1	1	1	1	Results of interviews and PRA with communities and government agency staff.	Interviews and PRA
303	Establishment of clearly defined boundaries and membership of resource using group	8								1	1							1	1	1	1	Project records, local rules, regulations	Review records, rules and regulations (annually or less frequently)
304	Existence of representative coordinating or management body	8	*							1	1			1				1	1	1	1	Management records	Annual surveys of communities and conservation staff, local records, interviews.
305	Change of the legal and regulatory framework at the national level	8	*							1								1	1	1	1	Official gazette, national law registry	Review of status of exisiting and pending legislation and policies, including legislation on protected areas and endangered species
306	Change of the legal status of an area (e.g. legal gazettment), including definition of boundaries	8	*							1								1	1	1	1	Official gazette, national law registry	Review status of boundary demarcation
307	Permanent institutional arrangements and/or management structure	8	*							1	1		1	1				1	1	1	1	Structural organization of management	Evaluate incorporation of project management units into permanent structures, co-management arrangements, decentralisation of management.
308	Change of use rights at a project site	8	*							1								1	1	1	1	Government policies and law on use rights	Track the development and implementation of policies and laws which define user rights in an area.
309	Local level or resource user/regulator awareness of the important components of relevant resource management laws and regulations	8	*	*						1								1	1	1	1	Survey and intervies data	Surveys and interviews
310	The number of infringements	8	*							1	1	1						1	1	1	1	Evidence of infringements (physical evidence in field, community reports, official records)	Establish agreed acceptable level and calcualte the difference annually, or at an interval agreed with stakeholders.
311	Percentage of arrests (protected area infringement, trade of endangered wildlife, bushmeat) leading to conviction	8		*						1								1	1	1	1	Field and official/court reports	Calcualte from field and official/court reports
312	Change of percent of repeat offenders appearing in court	8	*							1								1	1	1	1	Field and official/court reports	Calcualte from field and official/court reports
313	Proportion of budget allocated to highest priority conservation management areas/functions	8	*							1	1	1		1				1	1	1	1	Budget documents	identify highest priorities and revies budget allocation annually.
314	Change of sustainability of funding for management	8	*							1								1	1	1	1	Information on (proposed or actual) management funding sources.	Review information annually or less often
315	Availability and timeliness of release of funds	8	*							1	1	1		1				1	1	1	1	Annual budget. Local financial records. Results of interviews with local management staff.	Calculate from official records and interview results.

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						*Data sets*	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
316	Change of extent to which field and local management staff are involved in, and understand, the budgetary process	8	*							1								1	1	1	1	Results of interviews with local management staff.	Interviews with local management staff
317	The quality and/or quantity of facilities and equipment	8	*							1	1	1						1	1	1	1	Management records, inventory	Identify the equipment and facilities needed, and available
318	Number of trained staff in relevant agencies or areas (needed vs actual)	8	*							1								1	1	1	1	Staffing levels	Calculate necessary staffing levels and check actuall staffing levels annually.
319	The rate of turnover of staff at a site	8	*							1	1	1		1				1	1	1	1	Staff records	Calcualte from official records
320	The average performance rating of staff at a particular location	8	*							1	1	1		1				1	1	1	1	Results of individual performance evaluations (duty statements; training history; work programs; fiel patrol records; interview results)	Develop and use a performance rating system and update ratings every 1-2 years.
321	Average amount of time (person-days of protected area staff) spent in the field	8	*							1	1	1	1	1	1		1	1	1	1	1	Time sheets and fiel reports	Calcualte field time
322	Existence of representative coordinating or management body which involves key stakeholders	8	*							1								1	1	1	1	Project/government records, community interviews	Examine records to conduct interviews.
323	Existence of formal conservation agreements	8	*							1	1	1	1	1				1	1	1	1	Project/government records, community interviews	Examine records to conduct interviews.
325	Budget allocated to monitoring, or number of staff trained in monitoring	8	*							1	1	1	1				1	1	1	1	1	Results of review of budget, staffing, management systems	Review budget, staffing and management systems annually or less frequently.
326	Status of monitoring information management system	8	*							1							1	1	1	1	1	Management systems	Review of existing systems
327	Integration of biodiversity monitoring into the routine duties of field staff	8	*							1	1	1	1	1			1	1	1	1	1	Annual work programs and patrol reports	Review annual work programms and patrol reports.
328	Extent and timeliness of implementation of scheduled/planned activities	8	*							1	1	1					1	1	1	1	1	Management records	Calculate wether management bodies are meeting agreed targets.
329	Number and nature of threats to site	8	*							1	1	1	1				1	1	1	1	1	Recorded evidence of unlawful activity, field reports and aerial surveys, results of threat review, new development plans.	Calculate form official reports. Carry out threat review.
331	Existence of an agreed procedure for conflict resolution on natural resource management issues	8	*							1	1						1	1	1	1	1	Project or government records, documentation of traditional resource management regime	Review records and documents, interviews.
332	Change of proportion of conflicts which are successfully resolved	8	*							1							1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.
333	Reduced conflicts over access or use rights	8	*							1	1	1					1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.
334	Degree of tolerance of wildlife on community	8	*	*						1	1						1	1	1	1	1	Community and management records.	Review records, carry out interviews and PRA.

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	Suitability				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
	land																						
349	Existence of institutional capacity, policy and regulatory framework for the planning, management and conservation of biological diversity	9	*							1	1	1	1	1			1	1	1	1	1		
356	International conventions acceeded to	9	*							1	1						1	1	1	1	1		
357	NGOs programmes and action plans	9	*							1						1	1	1	1	1	1		
362	Endangered species with plans of action (all categories of endangerment, and all types of plans of action)	9	*							1	1			1			1	1	1	1	1		
364	ENP percentage with planning of approved arrangement, utilization and management	9	*							1								1					
392	Existence of procedures for identifying endangered, rare, and threatened species	9		*						1	1					1	1	1	1	1	1		
Driver indicators of inland water biological diversity																							
132	Net population migration rate	4				1					1	1	1			1	1	1	1	1			
133	Total fertility rate	4				1					1	1	1	1		1	1	1	1	1			
135	Rate of growth of urban population	4				1					1	1		1		1	1	1	1	1			
137	Share of natural-resource intensive industries in manufacturing value added [?]	4				1										1	1	1	1	1			
139	Annual withdrawls of ground and surface water	4				1					1	1							1				
140	Domestic consumption of water per capita	4				1					1	1							1				
160	Use of agricultural pesticides	4				1										1			1	1			
161	Use of fertilizers	4				1										1			1	1			
179	Generation of radioactive wastes	4			*	1					1	1	1	1		1	1	1	1	1			
289	Change of total human population inside and around (e.g. within 20 km) conservation areas	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
290	Demographic factors (age structure, settlement patterns, education levels, etc.) of relevant human population in or around conservation area	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
292	Change of proportion of income derived from alternative livelihood activities	8	*			1					1						1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
293	Change of resource consumption for household use vs. marketing	8	*			1					1	1					1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
294	Change of rate of consumption of biodiversity resources by different groups (e.g. local communities vs. outside interests)	8	*			1											1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
295	Change of number or percent of people harvesting biodiversity resources	8	*			1					1						1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
296	Change of levels of exploitation toward or away from sustainable use	8	*			1					1						1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
297	Change of number or percent of people engaging in alternative livelihood activities	8	*			1					1							1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
298	Change of number and/or nature (full time, seasonal, etc.) of community members employed in project and related activities	8	*			1					1	1						1	1	1	1	Project reports, project employment records.	Examine reports and records every one or two years.
324	Change of level of understanding of biodiversity concepts and conservation objectives	8	*			1												1	1	1	1	Results of structured interviews/questionnaires	Structured interviews and/or questionnaires
458	Availability of regulated water resources: reserves of reservoir water	9		*		1					1								1				
459	Improvements in the distribution of water	9		*		1													1				
460	Droughts: change of annual rainfall compared to the long-term average rainfall	9		*		1					1	1	1	1					1				
Pressure indicators of inland water biological diversity																							
8	Land use	2	*			1					1	1	1	1		1	1	1	1	1		Remote sensing coverage; agricultural census data on land uses	FAO recommendation
9	Ratio between maximum fish sustained yield abundance and the actual abundance	2	*			1						1	1						1	1		Most countries collect data on annual catch. Calculations are often done by marine resource insitutes or universities	FAO recommendation
17	Karst activity	2	*			1					1	1				1	1	1	1		1		
23	Streamflow: velocity, volume per time etc. specify seasonality	2	*			1					1	1	1			1		1	1		1		
35	Change of presence, location, area, number of invasive plant or animal species	2	*	*		1					1	1	1			1	1	1	1	1	1		
38	Water resource vulnerability index	2	*			1													1				
56	Species diversity used for food	2		*		1					1	1	1	1		1	1	1	1	1	1		
86	Species used by local residents	2		*	*	1					1	1					1	1	1	1	1		
134	Population density	4				1					1	1	1	1		1	1	1	1	1			

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	Suitability				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
170	Emissions of greenhouse gases	4,11				1					1	1	1			1	1	1	1				CO2, CH4, N2O, NMVOC, CO, Nox, CFC, SO2, HCFC, CF emissions
171	Emissions of sulphur oxides	4				1					1	1	1			1	1	1	1				
172	Emissions of nitrogen oxides	4				1					1	1	1			1	1	1	1				
173	Consumption of ozone depleting substances (Chlorofluorocarbons, Halons, chlorinated carbons, HFCFCs))	4,11				1					1	1	1	1		1	1	1	1				Chlorofluorocarbons: CFs, CF2Cl2 (CFC-12), CFCl3 (CFC11), CF2ClCF2Cl (CFC-114), CF3CF2Cl (CFC-115), C3FCl7 to C3F7Cl (CFC-211 to CFC-217), CF3Cl (CFC-111), CFCl2CFCl2 (CFC-112), CF2ClCFCl2 (CFC-113); Halons: CF2ClBr (halon-1211), CF3Br (halon-1301), CF3CFBr2 (halon-2402); Chlorinated carbons: CCl4), CH3CCl3; HCHCs: CHF2Cl (HCFC-22), CH2FCl (HCFC-31), CHFCl2 (HCFC-21); Methyl bromide: CH3Br
174	Ambient concentrations of pollutants in urban areas	4,11				1					1	1	1	1		1	1	1	1				CO2, SO2, Nox, PM10, VOC, Pb
291	Proportion of income derived from uncultivated biodiversity resources	8	*			1					1	1				1	1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
330	Rate of encroachment into PAs	8	*			1					1	1	1				1	1	1	1	1	Remote sensing data, field reports, land use data.	Remote sensing, aerial survey, map overlays, GIS should be repeated every two to five years.
448	Depletion of water points	9		*		1					1	1	1						1				
449	Rate of destruction of water habitats per annum	9		*		1					1								1				
457	Water consumption index by the sector (agricultural, energy, industry, tourism and services), the index being the quotient between the consumptive demand (detraction-return) and the potential resource	9		*		1													1				
461	Other alternatives of water production: drinkable water through techniques of desalinisation and water collected from rain	9		*		1													1				
483	Amount of animal waste, NH3 emissions	*	*			1					1	1	1	1		1	1	1	1		1		NH3
486	Surface disposal of mine deposits	11	*			1					1	1	1	1			1	1	1	1			
487	Trade records	*			*	1					1	1	1	1			1	1	1	1	1		
491	Interference with freshwater flow to the coast	11	*			1					1	1	1	1					1				
492	Ore extraction	11	*			1					1	1	1	1			1	1	1	1			

State indicators of inland water biological diversity

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
15	Groundwater quality (nitrates, salinity, toxicants)	2	*					1			1	1	1		1	1	1	1	1				
18	Lake levels and salinity	2	*					1			1	1	1	1					1				
24	Stream sediment storage and load	2	*					1			1	1	1					1	1				
34	Limiting factors for key species, e.g. nest holes for parrots, fruit bat roosting trees	2	*	*				1			1	1	1	1			1	1	1	1	1		
36	Fish family diversity	2	*	*				1			1	1	1	1					1	1			
48	Percentage of area in strictly protected status	2	*	*				1			1	1	1	1			1	1	1	1	1		
50	Number of inland fish species introduced	2	*	*				1			1	1		1					1				
51	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	2		*				1			1	1					1	1	1	1	1		
52	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals)	2		*				1			1	1					1	1	1	1	1		
53	Algae index	2		*				1			1	1	1	1					1	1			
58	Threatened fish species as a percentage of total freshwater fish species known	2		*				1			1	1	1	1					1	1			
59	Presence of taxa indicators of environmental integrity	2		*				1			1	1	1	1		1	1	1	1	1			
60	Degree of connectivity of food webs	2		*				1			1	1					1	1	1	1			
61	Recorded species present (by group)	2		*				1			1	1	1	1		1	1	1	1	1			
62	Indigenous species present (by group)	2		*				1								1	1	1	1	1	1		
64	Number of endemic species per taxonomic group	2		*				1			1	1	1	1			1	1	1	1	1		
66	Change of composition of species over time	2		*				1								1	1	1	1	1			
69	Spatial differences in the number of rare vs common species	2		*				1			1	1				1	1	1	1	1			
70	Spatial differences in the number of restricted vs wide-range species	2		*				1			1	1				1	1	1	1	1			
71	Representativeness of intraspecific variability of endangered and economically important species	2		*				1			1	1	1	1		1	1	1	1	1			
74	Diversity of native fauna	2		*				1								1	1	1	1	1			
75	Species richness (number, number per unit area, number per habitat type)	2		*	*			1								1	1	1	1	1	1		
130	Natural capital index framework	3	*					1			1	1	1	1			1	1	1	1	1	Sum (percent agro-ecosystem quantity * percent	For example four quality variables measured as

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
																						agro-ecosystem quality)	percent of baseline, e.g. (70%+20%+0%+30%)/4=30% multiplied with percent ecosystem type of total national area and summed up for different types
136	Percent of population in urban areas	4						1			1	1	1	1		1	1	1	1	1			
141	Groundwater reserves	4						1			1	1	1	1					1				
142	Concentration of faecal coliform in freshwater	4						1			1	1	1	1					1				
143	Biochemical oxygen demand in water bodies	4						1			1	1	1	1					1				
150	Algae index	4						1			1	1	1	1					1	1			
154	National monthly rainfall index	4						1			1	1		1		1	1	1	1				
168	Threatened species as a percent of total native species	4						1			1	1	1			1	1	1	1	1			
225	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	7		*				1			1	1	1	1		1	1	1	1	1	1		
226	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals)	7		*				1									1	1	1	1			
227	Distribution and dispersion of special interets species across the region	7		*				1			1						1	1	1	1			
228	Population growth and fluctuation trends of special interest species	7		*				1			1	1	1				1	1	1	1			
229	Fertility, fecundity, recruitment rate, survivorship, mortality rate, individual growth rate, and other individual and population health parameters	7		*				1			1	1	1				1	1	1	1			
230	Trends in habitat components for special interest species (varies by species)	7		*				1									1	1	1	1			
231	Trends in threats to special interest species (depends on life history and sensitivity of species in relation to land use practices and other influences)	7		*				1									1	1	1	1			
232	Identity, relative abundance, frequency, richness and evenness of species and guilds (in various habitats)	7	*					1			1						1	1	1	1			
284	Difference between largest/longest of a given fish species in fish catch and largest/longest	8		*				1			1	1	1	1					1	1	1	Average sizes/lengths of given species in catches. Maximum sizes from literature.	Some community members paid to collect data, or fish marketing staff collect data.

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	recorded size for species																						
335	Self-regenerating habitat	10						1									1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
336	Man-made habitat	10						1			1	1					1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
337	Native vegetation fragmentation	10						1			1	1				1	1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
338	Wetland drainage and filling	10						1			1	1		1				1	1			Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
339	Conversion of coastal areas	10						1			1	1					1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
342	Species richness	10						1									1	1	1	1	1	Natural biodiversity data base, surveys, transects, sampling reports	Monitoring and research programmes, inventories
343	Change of abundance and/or distribution of a selected core set of species	10						1			1	1	1				1	1	1	1	1	Wide area, transect, sample results	Surveys and monitoring programmes depending on the species involved
344	Threatened species as percentage of total species or certain taxonomic groups	10						1			1	1	1				1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
345	Percent endemic species threatened	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
346	Threatened species in protected areas	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
347	Replacement of indigenous crops	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent regression, DNA sequencing, electrophoresis, karyotypic analysis
348	Replacement of land races with few imported ones	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent regression, DNA sequencing, electrophoresis, karyotypic analysis
350	Size and distribution of protected areas according to IUCN 1-6	9	*					1									1	1	1	1	1		
352	Number of endemic, threatened/endangered/vulnerable species by taxonomic group	9	*					1			1	1	1	1		1	1	1	1	1	1		
353	Number of visitors to protected areas	9	*					1			1	1	1	1			1	1	1	1	1		
354	Number of threatened mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	*Suitability*				EW	Thematic area AG	DL	FO	IW	MC	Mt	*Data sets*	Methodology
355	Number of endangered mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		
358	Percentage of protected area of different ecosystem types	9	*					1			1	1	1	1			1	1	1	1	1		
359	Species of communal interest of all indigenous species (percent)	9	*					1									1	1	1	1	1		
360	Endangered species of all indigenous species (percent)	9	*					1									1	1	1	1	1		
361	Alien species of all indigenous species (percent)	9	*					1			1					1	1	1	1	1	1		
436	Surface water quality: nitrogen, dissolved oxygen, pH, pesticides, heavy metals, temperature	9	*					1			1	1	1	1					1				
437	Wetland area	9	*					1			1			1					1				
438	Benthic macroinvertebrates: communities	9	*					1			1								1				
439	Macrophytes: species composition and depth distribution	9	*					1			1								1				
440	Threatened freshwater fish species as a percentage of total freshwater fish species	9		*				1			1	1	1	1					1				
442	Number of endemic flora and fauna	9		*				1			1		1	1					1				
445	Changes in fish catches by species	9		*				1			1	1	1	1					1				
446	Species richness (number per unit area, number per habitat)	9		*				1			1	1	1						1				
447	Indicator species	9		*				1			1			1					1				
450	Area and state of water per habitat i.e. riverine areas and wetlands	9		*				1			1	1	1						1				
452	Genetic monitoring of salmon and whitefish	9		*				1											1				
455	Rivers with good quality according to biotic indexes	9		*				1			1	1	1	1					1				
Impact indicators of inland water biological diversity																							
5	Quantity of a particular species in fish catches at specified season	2	*						1		1	1	1	1					1	1			Fisheries Dept. reports, market survey, price survey, questionnaires
6	Change of vegetation type along watercourses	2	*						1		1	1	1						1			Area of riparian vegetation type, boudary of riparian vegetation, etc.	Remote sensing or transect, quadrat survey
27	Total area of a particular habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
28	Size of largest block of each habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
29	Mean nearest distance between blocks of a particular habitat type	2	*						1		1	1	1			1	1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
33	Number and distribution of keystone or indicator species	2	*	*					1		1	1	1			1	1	1	1	1	1		
40	Number of introduced species and genomes	2	*	*					1		1	1				1	1	1	1	1	1		
41	Quantity of specimens or species of economic/scientific interest removed from the environment	2	*	*					1							1	1	1	1	1	1		
42	Extraction and tourism for Ramsar sites	2	*						1		1	1							1				
43	Proportion of protected area to converted/utilized area	2	*						1		1	1					1	1	1	1	1		
44	Erosion/loss of genetic diversity patrimony	2	*	*	*				1							1	1	1	1	1	1		
46	Rate of change from dominance of non-domesticated to domesticated species	2	*	*					1		1	1				1	1		1				
49	Population growth and fluctuation trends of special interest species	2	*	*					1		1	1				1	1	1	1	1	1		
63	Number of non-indigenous species present (by taxonomic group)	2		*					1		1	1	1	1		1	1	1	1	1	1		
65	Change of number of species (species richness) over time (increase/decrease)	2		*					1							1	1	1	1	1			
67	Species groups: total number vs. threatened species	2		*					1		1	1	1	1			1	1	1	1			
68	Species with smaller population size vs larger population size	2		*					1		1	1				1	1	1	1	1			
77	Number of species in taxonomic group threatened with extirpation	2		*	*				1		1	1	1	1		1	1	1	1	1	1		
78	Number of endemic species in taxonomic group threatened with extinction	2		*	*				1		1	1	1	1		1	1	1	1	1			
79	Species risk index	2		*	*				1							1	1	1	1	1			
80	Species with stable or increasing populations (number or percent)	2		*	*				1							1	1	1	1	1			
81	Species with decreasing populations (number or percent)	2		*	*				1							1	1	1	1	1			
83	Number of endemic species in protected areas	2		*	*				1		1	1	1	1			1	1	1	1			
177	Chemically induced acute poisonings of humans	4							1		1					1		1	1				
268	Change of total area of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
269	Change of area of largest block of a particular habitat type	8	*						1		1	1	1	1		1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	*Suitability*				EW	Thematic area AG	DL	FO	IW	MC	Mt	*Data sets*	Methodology
270	Change of average size of a particular habitat type	8	*						1		1	1	1			1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
271	Change of mean nearest distance between blocks of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
272	Change of average width of break in an identified habitat corridor	8	*						1							1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
273	Change of number or total area of protected areas	8	*						1		1	1	1	1		1	1	1	1	1	1	Spatial plans	GIS or overlay maps
274	Change of total area of land uses compatible with biodiversity conservation in the monitoring area	8	*						1							1	1	1	1	1	1	Area of identified compatible land uses	Remote sensing data or field reports. Land use maps are likely to be available from other agencies
275	Change of crown cover percent	8	*						1		1	1		1			1	1	1		1	Canopy cover in percent of upper canopy (wether tree, shrub, grass, etc.)	Standard canopy cover methods, possibly done seasonally , or at least annually in the same season
276	Change of location of habitat boundaries	8	*						1			1	1				1	1	1		1	Location of boundary in defined quadrats or transects	Long-term (possibly every two to five years) survey of sites, and/or fixed point photography
277	Change of vegetation along watercourses	8	*						1		1	1							1		1	Area of riparian vegetation type, boudary of riparian vegetation, etc.	Remote sensing or transect, quadrat survey
282	Abundance (number per taxonomic group) of key animal species	8		*					1		1	1	1	1			1	1	1	1	1	Encounter rate (e.g. sight, sound, sign) along transects. Number of individual at concentration points such as colonies or roosts. Management patrol reports	Management staff monitor transects (e.g. sections of track) on regular patrols. Regular counts at concetnration points.
283	Change of proportion of particular species in fish catches at specified season	8		*					1		1	1	1	1					1	1	1	Records kept by community	Management staff collect information from community
285	Range of designated species (either total range or range within monitoring area)	8		*					1		1	1	1				1	1	1	1	1	Combination of sighting data and transect sign data.	National level staff combine indicator data for all relevant areas.
286	Amount of plant or animal material by species harvested in protected area	8		*					1		1	1	1		1		1	1	1	1	1	Amount of resource harvested in a defined area as recorded by the local community.	Record keeping by community or sub-group.
287	Amount of designated resource harvested per unit effort	8		*					1		1	1	1		1	1	1	1	1	1	1	Amount of resource harvested per unit effort.	Community, sub-group of community or nominated individuals keep records.
288	Number of confirmed instances of hunting and/or harvesting of designated species in a given time period	8		*					1		1	1	1	1			1	1	1	1	1	Combination of : field evidence and village and market surveys.	Information collected by management patrols, from villagers or from market traders.
441	Number of exotic flora and fauna species e.g.fish aquatic weeds	9		*					1		1	1		1					1				
443	Changes in distribution and abundance of native flora and fauna	9		*					1										1				
444	Number of extinct, endangered,	9		*					1		1	1							1				

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	threatened/endangered/ vulnerable/endemic inland water species by group (e.g. birds, aquatic mammals, invertebrates, amphibians, vascular plants, bottom fauna)																						
451	Area of water habitats destroyed by types of activities	9		*					1										1				
453	Salinization of aquifers (coastal and inland) of human origin	9		*					1		1	1	1	1					1				
454	Reservoir that has eutrophication	9		*					1		1								1				
456	Organic contamination	9		*					1		1	1	1	1					1				
Response indicators of inland water biological diversity																							
30	Average width of break in an identified habitat corridor	2	*							1						1	1	1	1	1	1		
31	Number or total area of protected areas	2	*							1	1	1	1	1			1	1	1	1	1		
32	Location of habitat boundaries	2	*							1	1	1					1	1	1	1	1		
84	Number of threatened species in taxonomic groups in *ex situ* collections	2		*	*					1	1	1	1	1		1	1	1	1	1			
85	Number of threatened species in taxonomic group with viable *ex situ* populations	2		*	*					1	1	1	1	1		1	1	1	1	1			
138	Environmental protection expenditures as a percent of GDP	4								1	1	1		1		1	1	1	1	1			
144	Waste water treatment coverage and functioning	4								1	1	1	1	1					1	1			
145	Density of hydrological networks	4								1	1	1	1	1					1	1			
149	Data available on maximum sustained yield for fisheries	4								1	1	1	1	1					1	1			
153	Decentralized local-level natural resource management	4								1						1	1	1	1	1			
169	Protected area as a percent of total area	4								1	1	1	1	1			1	1	1	1			
175	Expenditure on air pollution abatement	4								1	1		1	1		1	1	1	1				
176	Existence of national biosafety regulations or guidelines	4								1	1					1			1	1			
178	Number of chemicals banned or severly restricted	4								1	1					1		1	1				
182	Mandated environmental impact assessment	4								1	1	1	1	1			1	1	1	1			
183	Scientists and engineers engaged in research and development per million population	4								1	1					1	1	1	1	1			

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
184	Implementation of ratified global agreements	4								1						1	1	1	1	1			
185	Programmes for national environmental statistics	4								1						1	1	1	1	1			
299	Number of awareness programmes undertaken	8	*							1	1	1	1					1	1	1	1	Project reports	Annual surveys
300	Number of schools visited	8	*							1	1	1	1					1	1	1	1	Project reports	Annual surveys
301	Community cooperation with conservation staff (such as anti-poaching activities, monitoring)	8	*							1	1	1	1	1				1	1	1	1	Results of interviews and PRA with communities and government agency staff.	Interviews and PRA
302	Self-monitoring of resource by users	8	*							1	1	1	1					1	1	1	1	Results of interviews and PRA with communities and government agency staff.	Interviews and PRA
303	Establishment of clearly defined boundaries and membership of resource using group	8								1	1							1	1	1	1	Project records, local rules, regulations	Review records, rules and regulations (annually or less frequently)
304	Existence of representative coordinating or management body	8	*							1	1			1				1	1	1	1	Management records	Annual surveys of communities and conservation staff, local records, interviews.
305	Change of the legal and regulatory framework at the national level	8	*							1								1	1	1	1	Official gazette, national law registry	Review of status of exisiting and pending legislation and policies, including legislation on protected areas and endangered species
306	Change of the legal status of an area (e.g. legal gazettment), including definition of boundaries	8	*							1								1	1	1	1	Official gazette, national law registry	Review status of boundary demarcation
307	Permanent institutional arrangements and/or management structure	8	*							1	1		1	1				1	1	1	1	Structural organization of management	Evaluate incorporation of project management units into permanent structures, co-management arrangements, decentralisation of management.
308	Change of use rights at a project site	8	*							1								1	1	1	1	Government policies and law on use rights	Track the development and implementation of policies and laws which define user rights in an area.
309	Local level or resource user/regulator awareness of the important components of relevant resource management laws and regulations	8	*	*						1								1	1	1	1	Survey and intervies data	Surveys and interviews
310	The number of infringements	8	*							1	1	1						1	1	1	1	Evidence of infringements (physical evidence in field, community reports, official records)	Establish agreed acceptable level and calcualte the difference annually, or at an interval agreed with stakeholders.
311	Percentage of arrests (protected area infringement, trade of endangered wildlife, bushmeat) leading to conviction	8		*						1								1	1	1	1	Field and official/court reports	Calcualte from field and official/court reports
312	Change of percent of repeat offenders appearing in court	8	*							1								1	1	1	1	Field and official/court reports	Calcualte from field and official/court reports
313	Proportion of budget allocated to highest priority conservation management areas/functions	8	*							1	1	1		1				1	1	1	1	Budget documents	identify highest priorities and revies budget allocation annually.
314	Change of sustainability of funding for	8	*							1								1	1	1	1	Information on (proposed or actual) management	Review information annually or less often

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						*Data sets*	*Methodology*
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	management																					funding sources.	
315	Availability and timeliness of release of funds	8	*							1	1	1		1				1	1	1	1	Annual budget. Local financial records. Results of interviews with local management staff.	Calculate from official records and interview results.
316	Change of extent to which field and local management staff are involved in, and understand, the budgetary process	8	*							1								1	1	1	1	Results of interviews with local management staff.	Interviews with local management staff
317	The quality and/or quantity of facilities and equipment	8	*							1	1	1						1	1	1	1	Management records, inventory	Identify the equipment and facilities needed, and available
318	Number of trained staff in relevant agencies or areas (needed vs actual)	8	*							1								1	1	1	1	Staffing levels	Calculate necessary staffing levels and check actuall staffing levels annually.
319	The rate of turnover of staff at a site	8	*							1	1	1		1				1	1	1	1	Staff records	Calcualte from official records
320	The average performance rating of staff at a particular location	8	*							1	1	1		1				1	1	1	1	Results of individual performance evaluations (duty statements; training history; work programs; fiel patrol records; interview results)	Develop and use a performance rating system and update ratings every 1-2 years.
321	Average amount of time (person-days of protected area staff) spent in the field	8	*							1	1	1	1	1	1		1	1	1	1	1	Time sheets and fiel reports	Calcualte field time
322	Existence of representative coordinating or management body which involves key stakeholders	8	*							1								1	1	1	1	Project/government records, community interviews	Examine records to conduct interviews.
323	Existence of formal conservation agreements	8	*							1	1	1	1	1				1	1	1	1	Project/government records, community interviews	Examine records to conduct interviews.
325	Budget allocated to monitoring, or number of staff trained in monitoring	8	*							1	1	1	1				1	1	1	1	1	Results of review of budget, staffing, management systems	Review budget, staffing and management systems annually or less frequently.
326	Status of monitoring information management system	8	*							1							1	1	1	1	1	Management systems	Review of existing systems
327	Integration of biodiversity monitoring into the routine duties of field staff	8	*							1	1	1	1	1			1	1	1	1	1	Annual work programs and patrol reports	Review annual work programms and patrol reports.
328	Extent and timeliness of implementation of scheduled/planned activities	8	*							1	1	1					1	1	1	1	1	Management records	Calculate wether management bodies are meeting agreed targets.
329	Number and nature of threats to site	8	*							1	1	1	1				1	1	1	1	1	Recorded evidence of unlawful activity, field reports and aerial surveys, results of threat review, new development plans.	Calculate form official reports. Carry out threat review.
331	Existence of an agreed procedure for conflict resolution on natural resource management issues	8	*							1	1						1	1	1	1	1	Project or government records, documentation of traditional resource management regime	Review records and documents, interviews.
332	Change of proportion of conflicts which are successfully resolved	8	*							1							1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
333	Reduced conflicts over access or use rights	8	*							1	1	1					1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.
334	Degree of tolerance of wildlife on community land	8	*	*						1	1						1	1	1	1	1	Community and management records.	Review records, carry out interviews and PRA.
349	Existence of institutional capacity, policy and regulatory framework for the planning, management and conservation of biological diversity	9	*							1	1	1	1	1			1	1	1	1	1		
356	International conventions acceeded to	9	*							1	1						1	1	1	1	1		
357	NGOs programmes and action plans	9	*							1						1	1	1	1	1	1		
362	Endangered species with plans of action (all categories of endangerment, and all types of plans of action)	9	*							1	1			1			1	1	1	1	1		
392	Existence of procedures for identifying endangered, rare, and threatened species	9		*						1	1					1	1	1	1	1	1		
Driver indicators of marine and coastal biological diversity																							
132	Net population migration rate	4				1					1	1	1			1	1	1	1	1			
133	Total fertility rate	4				1					1	1	1	1		1	1	1	1	1			
135	Rate of growth of urban population	4				1					1	1		1		1	1	1	1	1			
137	Share of natural-resource intensive industries in manufacturing value added [?]	4				1										1	1	1	1	1			
146	Population growth in coastal areas	4				1					1	1	1	1						1			
147	Discharges of oil into coastal waters	4				1					1	1								1			
148	Release of nitrogen and phosphorus to coastal waters	4				1					1	1	1							1			
160	Use of agricultural pesticides	4				1										1			1	1			
161	Use of fertilizers	4				1										1			1	1			
179	Generation of radioactive wastes	4			*	1					1	1	1	1		1	1	1	1	1			
289	Change of total human population inside and around (e.g. within 20 km) conservation areas	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
290	Demographic factors (age structure, settlement patterns, education levels, etc.) of relevant human population in or around conservation area	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
292	Change of proportion of income derived from alternative livelihood activities	8	*			1					1						1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
293	Change of resource consumption for household use vs. marketing	8	*			1					1	1					1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
294	Change of rate of consumption of biodiversity resources by different groups (e.g. local communities vs. outside interests)	8	*			1											1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
295	Change of number or percent of people harvesting biodiversity resources	8	*			1					1						1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
296	Change of levels of exploitation toward or away from sustainable use	8	*			1					1						1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
297	Change of number or percent of people engaging in alternative livelihood activities	8	*			1					1							1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
298	Change of number and/or nature (full time, seasonal, etc.) of community members employed in project and related activities	8	*			1					1	1						1	1	1	1	Project reports, project employment records.	Examine reports and records every one or two years.
324	Change of level of understanding of biodiversity concepts and conservation objectives	8	*			1												1	1	1	1	Results of structured interviews/questionnaires	Structured interviews and/or questionnaires
475	Implementation of integrated management programmes of coastal areas	9	*			1				1										1			
Pressure indicators of marine and coastal biological diversity																							
1	Percentage of coastal zone with population exceeding 100 inhab./sq. km	2	*			1					1	1	1	1						1			
7	Forest area change	2	*			1					1	1		1			1	1		1		National authorites and FAO	From national forest inventories, sampling ground surveys; cadastral surveys, remote sensing and a combination of these
8	Land use	2	*			1					1	1	1	1		1	1	1	1	1		Remote sensing coverage; agricultural census data on land uses	FAO recommendation
9	Ratio between maximum fish sustained yield abundance and the actual abundance	2	*			1						1	1						1	1		Most countries collect data on annual catch. Calculations are often done by marine resource insitutes or universities	FAO recommendation
14	Coral chemistry and growth pattern	2	*			1					1	1			1					1			
35	Change of presence, location, area, number of invasive plant or animal species	2	*	*		1					1	1	1			1	1	1	1	1	1		
56	Species diversity used for food	2		*		1					1	1	1	1		1	1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	*Suitability*				EW	Thematic area AG	DL	FO	IW	MC	Mt	*Data sets*	Methodology
86	Species used by local residents	2		*	*	1					1	1					1	1	1	1	1		
134	Population density	4				1					1	1	1	1		1	1	1	1	1			
291	Proportion of income derived from uncultivated biodiversity resources	8	*			1					1	1				1	1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
330	Rate of encroachment into PAs	8	*			1					1	1	1				1	1	1	1	1	Remote sensing data, field reports, land use data.	Remote sensing, aerial survey, map overlays, GIS should be repeated every two to five years.
463	Number of large bottom trawling vessels per 1000 sq. km of coastal area	9	*			1					1			1						1			
465	Amount and poison chemicals and dynamite used for reef fishing	9	*			1														1			
468	Coastal population without purification treatment of sewage	9	*			1					1	1		1						1			
469	Number of boats and capacity of the national fishing fleet in the national fishing grounds	9	*			1					1									1			
476	Total boats, canoes operated on island per village	9	*			1					1			1						1			
486	Surface disposal of mine deposits	11	*			1					1	1	1	1			1	1	1	1			
487	Trade records	*			*	1					1	1	1	1			1	1	1	1	1		
488	Heavy metal discharges into marine environment	11	*			1					1	1	1	1						1			
489	Oil pollution at coast	11	*			1					1	1	1	1						1			
490	Oil pollution at sea	11	*			1					1	1	1	1						1			
492	Ore extraction	11	*			1					1	1	1	1			1	1	1	1			
493	Waste disposed of at sea	11	*			1					1	1	1	1						1			
State indicators of marine and coastal biological diversity																							
34	Limiting factors for key species, e.g. nest holes for parrots, fruit bat roosting trees	2	*	*			1				1	1	1	1			1	1	1	1	1		
36	Fish family diversity	2	*	*			1				1	1	1	1					1	1			
37	Relative wilderness index	2	*				1										1	1		1			
48	Percentage of area in strictly protected status	2	*	*			1				1	1	1	1			1	1	1	1	1		
51	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	2		*			1				1	1					1	1	1	1	1		
52	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest	2		*			1				1	1					1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	species (animals)																						
53	Algae index	2		*				1			1	1	1	1					1	1			
58	Threatened fish species as a percentage of total freshwater fish species known	2		*				1			1	1	1	1					1	1			
59	Presence of taxa indicators of environmental integrity	2		*				1			1	1	1	1		1	1	1	1	1			
60	Degree of connectivity of food webs	2		*				1			1	1					1	1	1	1			
61	Recorded species present (by group)	2		*				1			1	1	1	1		1	1	1	1	1			
62	Indigenous species present (by group)	2		*				1								1	1	1	1	1	1		
64	Number of endemic species per taxonomic group	2		*				1			1	1	1	1			1	1	1	1	1		
66	Change of composition of species over time	2		*				1								1	1	1	1	1			
69	Spatial differences in the number of rare vs common species	2		*				1			1	1				1	1	1	1	1			
70	Spatial differences in the number of restricted vs wide-range species	2		*				1			1	1				1	1	1	1	1			
71	Representativeness of intraspecific variability of endangered and economically important species	2		*				1			1	1	1	1		1	1	1	1	1			
74	Diversity of native fauna	2		*				1								1	1	1	1	1			
75	Species richness (number, number per unit area, number per habitat type)	2		*	*			1								1	1	1	1	1	1		
130	Natural capital index framework	3	*					1			1	1	1	1			1	1	1	1	1	Sum (percent agro-ecosystem quantity * percent agro-ecosystem quality)	For example four quality variables measured as percent of baseline, e.g. (70%+20%+0%+30%)/4=30% multiplied with percent ecosystem type of total national area and summed up for different types
136	Percent of population in urban areas	4						1			1	1	1	1		1	1	1	1	1			
150	Algae index	4						1			1	1	1	1					1	1			
168	Threatened species as a percent of total native species	4						1			1	1	1			1	1	1	1	1			
225	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	7		*				1			1	1	1	1		1	1	1	1	1	1		
226	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals)	7		*				1									1	1	1	1			

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	*Suitability*				EW	Thematic area AG	DL	FO	IW	MC	Mt	*Data sets*	Methodology
227	Distribution and dispersion of special interets species across the region	7		*				1			1						1	1	1	1			
228	Population growth and fluctuation trends of special interest species	7		*				1			1	1	1				1	1	1	1			
229	Fertility, fecundity, recruitment rate, survivorship, mortality rate, individual growth rate, and other individual and population health parameters	7		*				1			1	1	1				1	1	1	1			
230	Trends in habitat components for special interest species (varies by species)	7		*				1									1	1	1	1			
231	Trends in threats to special interest species (depends on life history and sensitivity of species in relation to land use practices and other influences)	7		*				1									1	1	1	1			
232	Identity, relative abundance, frequency, richness and evenness of species and guilds (in various habitats)	7	*					1			1						1	1	1	1			
284	Difference between largest/longest of a given fish species in fish catch and largest/longest recorded size for species	8		*				1			1	1	1	1					1	1	1	Average sizes/lengths of given species in catches. Maximum sizes from literature.	Some community members paid to collect data, or fish marketing staff collect data.
335	Self-regenerating habitat	10						1									1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
336	Man-made habitat	10						1			1	1					1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
337	Native vegetation fragmentation	10						1			1	1				1	1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
339	Conversion of coastal areas	10						1			1	1					1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
342	Species richness	10						1									1	1	1	1	1	Natural biodiversity data base, surveys, transects, sampling reports	Monitoring and research programmes, inventories
343	Change of abundance and/or distribution of a selected core set of species	10						1			1	1	1				1	1	1	1	1	Wide area, transect, sample results	Surveys and monitoring programmes depending on the species involved
344	Threatened species as percentage of total species or certain taxonomic groups	10						1			1	1	1				1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
345	Percent endemic species threatened	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
346	Threatened species in protected areas	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
347	Replacement of indigenous crops	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent regression, DNA sequencing, electrophoresis, karyotypic analysis
348	Replacement of land races with few imported ones	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent regression, DNA sequencing, electrophoresis, karyotypic analysis
350	Size and distribution of protected areas according to IUCN 1-6	9	*					1									1	1	1	1	1		
352	Number of endemic, threatened/endangered/vulnerable species by taxonomic group	9	*					1			1	1	1	1		1	1	1	1	1	1		
353	Number of visitors to protected areas	9	*					1			1	1	1	1			1	1	1	1	1		
354	Number of threatened mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		
355	Number of endangered mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		
358	Percentage of protected area of different ecosystem types	9	*					1			1	1	1	1			1	1	1	1	1		
359	Species of communal interest of all indigenous species (percent)	9	*					1									1	1	1	1	1		
360	Endangered species of all indigenous species (percent)	9	*					1									1	1	1	1	1		
361	Alien species of all indigenous species (percent)	9	*					1			1					1	1	1	1	1	1		
464	*E.coli* counts and nutrient levels as percent of basline levels	9	*					1			1	1	1	1						1			
466	Coastline land cover	9	*					1			1	1	1	1						1			
467	Protected coastal area	9	*					1			1	1		1						1			
470	Length of artificial coral reef	9	*					1			1			1						1			
480	Polluntants in polar bears	9		*				1			1	1	1	1						1			
481	Number of commercial fish populations inside/outside safe biological limits	9		*				1												1			
482	Monitoring of population trends in marine mammals	9		*				1			1		1	1						1			
Impact indicators of marine and coastal biological diversity																							
5	Quantity of a particular species in fish catches at	2	*						1		1	1	1	1					1	1			Fisheries Dept. reports, market survey, price

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						*AG*	*DL*	*FO*	*IW*	*MC*	*Mt*		
	specified season																						survey, questionnaires
19	Shoreline position	2	*						1		1	1	1	1						1			
27	Total area of a particular habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
28	Size of largest block of each habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
29	Mean nearest distance between blocks of a particular habitat type	2	*						1		1	1	1			1	1	1	1	1	1		
33	Number and distribution of keystone or indicator species	2	*	*					1		1	1	1			1	1	1	1	1	1		
40	Number of introduced species and genomes	2	*	*					1		1	1				1	1	1	1	1	1		
41	Quantity of specimens or species of economic/scientific interest removed from the environment	2	*	*					1							1	1	1	1	1	1		
43	Proportion of protected area to converted/utilized area	2	*						1		1	1					1	1	1	1	1		
44	Erosion/loss of genetic diversity patrimony	2	*	*	*				1							1	1	1	1	1	1		
49	Population growth and fluctuation trends of special interest species	2	*	*					1		1	1				1	1	1	1	1	1		
63	Number of non-indigenous species present (by taxonomic group)	2		*					1		1	1	1	1		1	1	1	1	1	1		
65	Change of number of species (species richness) over time (increase/decrease)	2		*					1							1	1	1	1	1			
67	Species groups: total number vs. threatened species	2		*					1		1	1	1	1			1	1	1	1			
68	Species with smaller population size vs larger population size	2		*					1		1	1				1	1	1	1	1			
77	Number of species in taxonomic group threatened with extirpation	2		*	*				1		1	1	1	1		1	1	1	1	1	1		
78	Number of endemic species in taxonomic group threatened with extinction	2		*	*				1		1	1	1	1		1	1	1	1	1			
79	Species risk index	2		*	*				1							1	1	1	1	1			
80	Species with stable or increasing populations (number or percent)	2		*	*				1							1	1	1	1	1			
81	Species with decreasing populations (number or percent)	2		*	*				1							1	1	1	1	1			
83	Number of endemic species in protected areas	2		*	*				1		1	1	1	1			1	1	1	1			
268	Change of total area of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
269	Change of area of largest block of a particular habitat type	8	*						1		1	1	1	1		1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
270	Change of average size of a particular habitat type	8	*						1		1	1	1			1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
271	Change of mean nearest distance between blocks of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
272	Change of average width of break in an identified habitat corridor	8	*						1							1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
273	Change of number or total area of protected areas	8	*						1		1	1	1	1		1	1	1	1	1	1	Spatial plans	GIS or overlay maps
274	Change of total area of land uses compatible with biodiversity conservation in the monitoring area	8	*						1							1	1	1	1	1	1	Area of identified compatible land uses	Remote sensing data or field eports. Land use maps are likely to be available from other agencies
282	Abundance (number per taxonomic group) of key animal species	8		*					1		1	1	1	1			1	1	1	1	1	Encounter rate (e.g. sight, sound, sign) along transects. Number of individual at concentration points such as colonies or roosts. Management patrol reports	Management staff monitor transects (e.g. sections of track) on regular patrols. Regular counts at concetnration points.
283	Change of proportion of particular species in fish catches at specified season	8		*					1		1	1	1	1					1	1	1	Records kept by community	Management staff collect information from community
285	Range of designated species (either total range or range within monitoring area)	8		*					1		1	1	1				1	1	1	1	1	Combination of sighting data and transect sign data.	National level staff combine indicator data for all relevant areas.
286	Amount of plant or animal material by species harvested in protected area	8		*					1		1	1	1		1		1	1	1	1	1	Amount of resource harvested in a defined area as recorded by the local community.	Record keeping by community or sub-group.
287	Amount of designated resource harvested per unit effort	8		*					1		1	1	1		1	1	1	1	1	1	1	Amount of resource harvested per unit effort.	Community, sub-group of community or nominated individuals keep records.
288	Number of confirmed instances of hunting and/or harvesting of designated species in a given time period	8		*					1		1	1	1	1			1	1	1	1	1	Combination of : field evidence and village and market surveys.	Information collected by management patrols, from villagers or from market traders.
462	Annual rate of mangrove conversion	9	*						1		1	1		1						1			
471	Dumping of pollutants to the ocean water basins	9	*						1		1	1								1			
472	Contamination in critical points	9	*						1		1	1	1	1						1			
473	Denatured coast	9	*						1											1			
474	Quality of water in the ocean	9	*						1		1	1	1	1						1			
477	Gleaning or fishing off reef per village	9	*						1		1									1			
478	Trends in seabird population	9		*					1		1	1	1	1						1			
479	By-catch in fisheries	9		*					1		1			1						1			
Response indicators of marine and coastal biological diversity																							

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	Suitability				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
30	Average width of break in an identified habitat corridor	2	*							1						1	1	1	1	1	1		
31	Number or total area of protected areas	2	*							1	1	1	1	1			1	1	1	1	1		
32	Location of habitat boundaries	2	*							1	1	1					1	1	1	1	1		
84	Number of threatened species in taxonomic groups in *ex situ* collections	2		*	*					1	1	1	1	1		1	1	1	1	1			
85	Number of threatened species in taxonomic group with viable *ex situ* populations	2		*	*					1	1	1	1	1		1	1	1	1	1			
138	Environmental protection expenditures as a percent of GDP	4								1	1	1		1		1	1	1	1	1			
144	Waste water treatment coverage and functioning	4								1	1	1	1	1					1	1			
145	Density of hydrological networks	4								1	1	1	1	1					1	1			
149	Data available on maximum sustained yield for fisheries	4								1	1	1	1	1					1	1			
153	Decentralized local-level natural resource management	4								1						1	1	1	1	1			
169	Protected area as a percent of total area	4								1	1	1	1	1			1	1	1	1			
176	Existence of national biosafety regulations or guidelines	4								1	1					1			1	1			
182	Mandated environmental impact assessment	4								1	1	1	1	1			1	1	1	1			
183	Scientists and engineers engaged in research and development per million population	4								1	1					1	1	1	1	1			
184	Implementation of ratified global agreements	4								1						1	1	1	1	1			
185	Programmes for national environmental statistics	4								1						1	1	1	1	1			
299	Number of awareness programmes undertaken	8	*							1	1	1	1					1	1	1	1	Project reports	Annual surveys
300	Number of schools visited	8	*							1	1	1	1					1	1	1	1	Project reports	Annual surveys
301	Community cooperation with conservation staff (such as anti-poaching activities, monitoring)	8	*							1	1	1	1	1				1	1	1	1	Results of interviews and PRA with communities and government agency staff.	Interviews and PRA
302	Self-monitoring of resource by users	8	*							1	1	1	1					1	1	1	1	Results of interviews and PRA with communities and government agency staff.	Interviews and PRA
303	Establishment of clearly defined boundaries and membership of resource using group	8								1	1							1	1	1	1	Project records, local rules, regulations	Review records, rules and regulations (annually or less frequently)
304	Existence of representative coordinating or management body	8	*							1	1			1				1	1	1	1	Management records	Annual surveys of communities and conservation staff, local records, interviews.
305	Change of the legal and regulatory framework at the national level	8	*							1								1	1	1	1	Official gazette, national law registry	Review of status of exisiting and pending legislation and policies, including legislation on protected areas and endangered species

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
306	Change of the legal status of an area (e.g. legal gazettment), including definition of boundaries	8	*							1								1	1	1	1	Official gazette, national law registry	Review status of boundary demarcation
307	Permanent institutional arrangements and/or management structure	8	*							1	1		1	1				1	1	1	1	Structural organization of management	Evaluate incorporation of project management units into permanent structures, co-management arrangements, decentralisation of management.
308	Change of use rights at a project site	8	*							1								1	1	1	1	Government policies and law on use rights	Track the development and implementation of policies and laws which define user rights in an area.
309	Local level or resource user/regulator awareness of the important components of relevant resource management laws and regulations	8	*	*						1								1	1	1	1	Survey and intervies data	Surveys and interviews
310	The number of infringements	8	*							1	1	1						1	1	1	1	Evidence of infringements (physical evidence in field, community reports, official records)	Establish agreed acceptable level and calcualte the difference annually, or at an interval agreed with stakeholders.
311	Percentage of arrests (protected area infringement, trade of endangered wildlife, bushmeat) leading to conviction	8		*						1								1	1	1	1	Field and official/court reports	Calcualte from field and official/court reports
312	Change of percent of repeat offenders appearing in court	8	*							1								1	1	1	1	Field and official/court reports	Calcualte from field and official/court reports
313	Proportion of budget allocated to highest priority conservation management areas/functions	8	*							1	1	1		1				1	1	1	1	Budget documents	identify highest priorities and revies budget allocation annually.
314	Change of sustainability of funding for management	8	*							1								1	1	1	1	Information on (proposed or actual) management funding sources.	Review information annually or less often
315	Availability and timeliness of release of funds	8	*							1	1	1		1				1	1	1	1	Annual budget. Local financial records. Results of interviews with local management staff.	Calculate from official records and interview results.
316	Change of extent to which field and local management staff are involved in, and understand, the budgetary process	8	*							1								1	1	1	1	Results of interviews with local management staff.	Interviews with local management staff
317	The quality and/or quantity of facilities and equipment	8	*							1	1	1						1	1	1	1	Management records, inventory	Identify the equipment and facilities needed, and available
318	Number of trained staff in relevant agencies or areas (needed vs actual)	8	*							1								1	1	1	1	Staffing levels	Calculate necessary staffing levels and check actuall staffing levels annually.
319	The rate of turnover of staff at a site	8	*							1	1	1		1				1	1	1	1	Staff records	Calcualte from official records
320	The average performance rating of staff at a particular location	8	*							1	1	1		1				1	1	1	1	Results of individual performance evaluations (duty statements; training history; work programs; fiel patrol records; interview results)	Develop and use a performance rating system and update ratings every 1-2 years.

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*					EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R							AG	DL	FO	IW	MC	Mt		
321	Average amount of time (person-days of protected area staff) spent in the field	8	*							1	1	1	1	1	1			1	1	1	1	1	Time sheets and fiel reports	Calcualte field time
322	Existence of representative coordinating or management body which involves key stakeholders	8	*							1									1	1	1	1	Project/government records, community interviews	Examine records to conduct interviews.
323	Existence of formal conservation agreements	8	*							1	1	1	1	1					1	1	1	1	Project/government records, community interviews	Examine records to conduct interviews.
325	Budget allocated to monitoring, or number of staff trained in monitoring	8	*							1	1	1	1					1	1	1	1	1	Results of review of budget, staffing, management systems	Review budget, staffing and management systems annually or less frequently.
326	Status of monitoring information management system	8	*							1								1	1	1	1	1	Management systems	Review of existing systems
327	Integration of biodiversity monitoring into the routine duties of field staff	8	*							1	1	1	1	1				1	1	1	1	1	Annual work programs and patrol reports	Review annual work programms and patrol reports.
328	Extent and timeliness of implementation of scheduled/planned activities	8	*							1	1	1						1	1	1	1	1	Management records	Calculate wether management bodies are meeting agreed targets.
329	Number and nature of threats to site	8	*							1	1	1	1					1	1	1	1	1	Recorded evidence of unlawful activity, field reports and aerial surveys, results of threat review, new development plans.	Calculate form official reports. Carry out threat review.
331	Existence of an agreed procedure for conflict resolution on natural resource management issues	8	*							1	1							1	1	1	1	1	Project or government records, documentation of traditional resource management regime	Review records and documents, interviews.
332	Change of proportion of conflicts which are successfully resolved	8	*							1								1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.
333	Reduced conflicts over access or use rights	8	*							1	1	1						1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.
334	Degree of tolerance of wildlife on community land	8	*	*						1	1							1	1	1	1	1	Community and management records.	Review records, carry out interviews and PRA.
349	Existence of institutional capacity, policy and regulatory framework for the planning, management and conservation of biological diversity	9	*							1	1	1	1	1				1	1	1	1	1		
356	International conventions acceeded to	9	*							1	1							1	1	1	1	1		
357	NGOs programmes and action plans	9	*							1						1	1	1	1	1	1	1		
362	Endangered species with plans of action (all categories of endangerment, and all types of plans of action)	9	*							1	1			1				1	1	1	1	1		
392	Existence of procedures for identifying endangered, rare, and threatened species	9		*						1	1					1	1	1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
475	Implementation of integrated management programmes of coastal areas	9	*			1				1										1			
Driver indicators of mountain biological diversity																							
157	Population change of mountain areas	4				1					1	1	1	1							1		
289	Change of total human population inside and around (e.g. within 20 km) conservation areas	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
290	Demographic factors (age structure, settlement patterns, education levels, etc.) of relevant human population in or around conservation area	8	*			1					1	1	1	1			1	1	1	1	1	National or local statistical data or survey returns. Data from baseline and repeated socio-economic surveys.	Formal census data obtained from relevant agency. Surveys, possibly involving sampling. Monitor every 2-5 years.
292	Change of proportion of income derived from alternative livelihood activities	8	*			1					1						1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
293	Change of resource consumption for household use vs. marketing	8	*			1					1	1					1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
294	Change of rate of consumption of biodiversity resources by different groups (e.g. local communities vs. outside interests)	8	*			1											1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
295	Change of number or percent of people harvesting biodiversity resources	8	*			1					1						1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
296	Change of levels of exploitation toward or away from sustainable use	8	*			1					1						1	1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
297	Change of number or percent of people engaging in alternative livelihood activities	8	*			1					1							1	1	1	1	Survey returns, management records, market surveys	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
298	Change of number and/or nature (full time, seasonal, etc.) of community members employed in project and related activities	8	*			1					1	1						1	1	1	1	Project reports, project employment records.	Examine reports and records every one or two years.
324	Change of level of understanding of biodiversity concepts and conservation objectives	8	*			1												1	1	1	1	Results of structured interviews/questionnaires	Structured interviews and/or questionnaires
Pressure indicators of mountain biological diversity																							
12	Frozen ground activity	2	*			1					1		1			1					1		
13	Size of glacier area	2	*			1					1	1	1	1							1		
16	Ground water level	2	*			1					1	1	1			1	1	1			1		

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
17	Karst activity	2	*			1					1	1				1	1	1	1		1		
20	Slope failure (landslides)	2	*			1					1	1	1			1		1			1		
21	Soil and sediment erosion	2	*			1					1	1				1	1	1			1		
23	Streamflow: velocity, volume per time etc. specify seasonality	2	*			1					1	1	1			1		1	1		1		
26	Volcanic unrest: area newly covered by lava;area newly covered by ashes	2	*			1					1	1	1	1		1		1			1		
35	Change of presence, location, area, number of invasive plant or animal species	2	*	*		1					1	1	1			1	1	1	1	1	1		
56	Species diversity used for food	2		*		1					1	1	1	1		1	1	1	1	1	1		
86	Species used by local residents	2		*	*	1					1	1					1	1	1	1	1		
291	Proportion of income derived from uncultivated biodiversity resources	8	*			1					1	1				1	1	1	1	1	1	Survey returns	Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques, possibly every two or three years.
330	Rate of encroachment into PAs	8	*			1					1	1	1				1	1	1	1	1	Remote sensing data, field reports, land use data.	Remote sensing, aerial survey, map overlays, GIS should be repeated every two to five years.
368	Per capita wood consumption	9	*			1										1	1	1			1		
483	Amount of animal waste, NH3 emissions	*	*			1					1	1	1	1		1	1	1	1		1		NH3
487	Trade records	*			*	1					1	1	1	1			1	1	1	1	1		
State indicators of mountain biological diversity																							
22	Soil quality	2	*				1				1	1	1	1		1	1	1			1		
34	Limiting factors for key species, e.g. nest holes for parrots, fruit bat roosting trees	2	*	*			1				1	1	1	1			1	1	1	1	1		
48	Percentage of area in strictly protected status	2	*	*			1				1	1	1	1			1	1	1	1	1		
51	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	2		*			1				1	1					1	1	1	1	1		
52	Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals)	2		*			1				1	1					1	1	1	1	1		
62	Indigenous species present (by group)	2		*			1									1	1	1	1	1	1		
64	Number of endemic species per taxonomic group	2		*			1				1	1	1	1			1	1	1	1	1		
75	Species richness (number, number per unit area, number per habitat type)	2		*	*		1									1	1	1	1	1	1		
130	Natural capital index framework	3	*				1				1	1	1	1			1	1	1	1	1	Sum (percent agro-ecosystem quantity * percent	For example four quality variables measured as

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
																						agro-ecosystem quality)	percent of baseline, e.g. (70%+20%+0%+30%)/4=30% multiplied with percent ecosystem type of total national area and summed up for different types
158	Sustainable use of natural resources in mountain areas	4						1			1	1									1		
159	Welfare of mountain populations	4						1			1	1									1		
225	Absolute and relative abundance, density, basal area, cover, importance value for various species (plants)	7		*				1			1	1	1	1		1	1	1	1	1	1		
284	Difference between largest/longest of a given fish species in fish catch and largest/longest recorded size for species	8		*				1			1	1	1	1					1	1	1	Average sizes/lengths of given species in catches. Maximum sizes from literature.	Some community members paid to collect data, or fish marketing staff collect data.
335	Self-regenerating habitat	10						1									1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
336	Man-made habitat	10						1			1	1					1	1	1	1	1	Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, wetland and freshwater inventories	Overlay maps, GIS, Aerial surveys, Ground truthing
337	Native vegetation fragmentation	10						1			1	1				1	1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
339	Conversion of coastal areas	10						1			1	1					1	1	1	1	1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
340	Erosion	10						1			1	1				1	1	1			1	Land use plans, remote sensing data, surveys, FAO data	GIS, overlay maps
342	Species richness	10						1									1	1	1	1	1	Natural biodiversity data base, surveys, transects, sampling reports	Monitoring and research programmes, inventories
343	Change of abundance and/or distribution of a selected core set of species	10						1			1	1	1				1	1	1	1	1	Wide area, transect, sample results	Surveys and monitoring programmes depending on the species involved
344	Threatened species as percentage of total species or certain taxonomic groups	10						1			1	1	1				1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
345	Percent endemic species threatened	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
346	Threatened species in protected areas	10						1			1	1	1	1			1	1	1	1	1	Endangered and threatened species data sets	Surveys and monitoring programmes depending on the species involved
347	Replacement of indigenous crops	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent regression, DNA sequencing, electrophoresis,

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	*Suitability*				EW	Thematic area AG	DL	FO	IW	MC	Mt	*Data sets*	Methodology
																							karyotypic analysis
348	Replacement of land races with few imported ones	10						1									1	1	1	1	1	Allelic diversity, karyotype variants	Morphological analysis, offspring parent regression, DNA sequencing, electrophoresis, karyotypic analysis
350	Size and distribution of protected areas according to IUCN 1-6	9	*					1									1	1	1	1	1		
352	Number of endemic, threatened/endangered/vulnerable species by taxonomic group	9	*					1			1	1	1	1		1	1	1	1	1	1		
353	Number of visitors to protected areas	9	*					1			1	1	1	1			1	1	1	1	1		
354	Number of threatened mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		
355	Number of endangered mammal, bird, fish, and reptile species	9	*					1			1	1	1	1		1	1	1	1	1	1		
358	Percentage of protected area of different ecosystem types	9	*					1			1	1	1	1			1	1	1	1	1		
359	Species of communal interest of all indigenous species (percent)	9	*					1									1	1	1	1	1		
360	Endangered species of all indigenous species (percent)	9	*					1									1	1	1	1	1		
361	Alien species of all indigenous species (percent)	9	*					1			1					1	1	1	1	1	1		
Impact indicators of mountain biological diversity																							
4	Crown cover (%)	2	*						1		1	1	1				1	1			1	Canopy cover in percent at the upper canopy level	Standard canopy cover methods, possibly done seasonally, or at least annually in the same season
25	Surface displacement	2	*						1		1	1				1	1	1			1		
27	Total area of a particular habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
28	Size of largest block of each habitat/vegetation type	2	*						1		1	1	1	1		1	1	1	1	1	1		
29	Mean nearest distance between blocks of a particular habitat type	2	*						1		1	1	1			1	1	1	1	1	1		
33	Number and distribution of keystone or indicator species	2	*	*					1		1	1	1			1	1	1	1	1	1		
39	Livestock levels per sq. km	2	*						1		1	1		1		1	1	1			1		
40	Number of introduced species and genomes	2	*	*					1		1	1				1	1	1	1	1	1		
41	Quantity of specimens or species of economic/scientific interest removed from the environment	2	*	*					1							1	1	1	1	1	1		

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
43	Proportion of protected area to converted/utilized area	2	*						1		1	1					1	1	1	1	1		
44	Erosion/loss of genetic diversity patrimony	2	*	*	*				1							1	1	1	1	1	1		
49	Population growth and fluctuation trends of special interest species	2	*	*					1		1	1				1	1	1	1	1	1		
55	Ratio between exotic species plantation area and native species in plantation area	2		*					1		1	1	1	1			1	1			1		
63	Number of non-indigenous species present (by taxonomic group)	2		*					1		1	1	1	1		1	1	1	1	1	1		
77	Number of species in taxonomic group threatened with extirpation	2		*	*				1		1	1	1	1		1	1	1	1	1	1		
268	Change of total area of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
269	Change of area of largest block of a particular habitat type	8	*						1		1	1	1	1		1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
270	Change of average size of a particular habitat type	8	*						1		1	1	1			1	1	1	1	1	1	Remote sensing data (vegetation maps may already exist for baseline)	Manual methods using overlay maps, or GIS where feasible
271	Change of mean nearest distance between blocks of a particular habitat type	8	*						1		1	1				1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
272	Change of average width of break in an identified habitat corridor	8	*						1							1	1	1	1	1	1	Remote sensing data or measured in the field	Manual methods using overlay maps, or GIS where feasible
273	Change of number or total area of protected areas	8	*						1		1	1	1	1		1	1	1	1	1	1	Spatial plans	GIS or overlay maps
274	Change of total area of land uses compatible with biodiversity conservation in the monitoring area	8	*						1							1	1	1	1	1	1	Area of identified compatible land uses	Remote sensing data or field reports. Land use maps are likely to be available from other agencies
275	Change of crown cover percent	8	*						1		1	1		1			1	1	1		1	Canopy cover in percent of upper canopy (wether tree, shrub, grass, etc.)	Standard canopy cover methods, possibly done seasonally , or at least annually in the same season
276	Change of location of habitat boundaries	8	*						1			1	1				1	1	1		1	Location of boundary in defined quadrats or transects	Long-term (possibly every two to five years) survey of sites, and/or fixed point photography
277	Change of vegetation along watercourses	8	*						1		1	1							1		1	Area of riparian vegetation type, boudary of riparian vegetation, etc.	Remote sensing or transect, quadrat survey
278	Change of number of keystone or indicator species	8	*						1		1	1	1	1	1	1	1	1			1	Transect or wide area survey results	Survey of transects or sites, frequency depends on the species involved
279	Change of limiting factors for key species, e.g. nest holes for parrots, fruit bat roosting trees	8	*						1		1	1	1	1	1	1	1	1			1	Numbers, or presence/absence depends on the factors involved	Transects, quadrats, general observations

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					*Suitability*				EW	Thematic area						*Data sets*	Methodology
			E	S	G	D	P	S	I	R						*AG*	*DL*	*FO*	*IW*	*MC*	*Mt*		
280	Change of presence, location, area, number of invasive plant or animal species	8	*						1		1	1									1	Survey, transect or quadrat results, patrol reports, reports from community members	Transects, quadrats or interviews
281	Changes in frequency of events such as landslips	8	*						1		1	1	1	1		1	1	1			1	Patrol reports, aerial surveys, remote sensing	Incorporate into patrol reporting. Carry out specific surveys for identified events.
282	Abundance (number per taxonomic group) of key animal species	8		*					1		1	1	1	1			1	1	1	1	1	Encounter rate (e.g. sight, sound, sign) along transects. Number of individual at concentration points such as colonies or roosts. Management patrol reports	Management staff monitor transects (e.g. sections of track) on regular patrols. Regular counts at concetnration points.
283	Change of proportion of particular species in fish catches at specified season	8		*					1		1	1	1	1					1	1	1	Records kept by community	Management staff collect information from community
285	Range of designated species (either total range or range within monitoring area)	8		*					1		1	1	1				1	1	1	1	1	Combination of sighting data and transect sign data.	National level staff combine indicator data for all relevant areas.
286	Amount of plant or animal material by species harvested in protected area	8		*					1		1	1	1		1		1	1	1	1	1	Amount of resource harvested in a defined area as recorded by the local community.	Record keeping by community or sub-group.
287	Amount of designated resource harvested per unit effort	8		*					1		1	1	1		1	1	1	1	1	1	1	Amount of resource harvested per unit effort.	Community, sub-group of community or nominated individuals keep records.
288	Number of confirmed instances of hunting and/or harvesting of designated species in a given time period	8		*					1		1	1	1	1			1	1	1	1	1	Combination of : field evidence and village and market surveys.	Information collected by management patrols, from villagers or from market traders.
Response indicators of mountain biological diversity																							
30	Average width of break in an identified habitat corridor	2	*							1						1	1	1	1	1	1		
31	Number or total area of protected areas	2	*							1	1	1	1	1			1	1	1	1	1		
32	Location of habitat boundaries	2	*							1	1	1					1	1	1	1	1		
299	Number of awareness programmes undertaken	8	*							1	1	1	1					1	1	1	1	Project reports	Annual surveys
300	Number of schools visited	8	*							1	1	1	1					1	1	1	1	Project reports	Annual surveys
301	Community cooperation with conservation staff (such as anti-poaching activities, monitoring)	8	*							1	1	1	1	1				1	1	1	1	Results of interviews and PRA with communities and government agency staff.	Interviews and PRA
302	Self-monitoring of resource by users	8	*							1	1	1	1					1	1	1	1	Results of interviews and PRA with communities and government agency staff.	Interviews and PRA
303	Establishment of clearly defined boundaries and membership of resource using group	8								1	1							1	1	1	1	Project records, local rules, regulations	Review records, rules and regulations (annually or less frequently)
304	Existence of representative coordinating or management body	8	*							1	1			1				1	1	1	1	Management records	Annual surveys of communities and conservation staff, local records, interviews.
305	Change of the legal and regulatory framework at the national level	8	*							1								1	1	1	1	Official gazette, national law registry	Review of status of exisiting and pending legislation and policies, including legislation on protected areas and endangered species
306	Change of the legal status of an area (e.g. legal	8	*							1								1	1	1	1	Official gazette, national law registry	Review status of boundary demarcation

No.	Indicator/verifier	Source	Level of biol. org			Indicator type					Suitability				EW	Thematic area						Data sets	Methodology
			E	S	G	D	P	S	I	R						AG	DL	FO	IW	MC	Mt		
	gazettment), including definition of boundaries																						
307	Permanent institutional arrangements and/or management structure	8	*							1	1		1	1				1	1	1	1	Structural organization of management	Evaluate incorporation of project management units into permanent structures, co-management arrangements, decentralisation of management.
308	Change of use rights at a project site	8	*							1								1	1	1	1	Government policies and law on use rights	Track the development and implementation of policies and laws which define user rights in an area.
309	Local level or resource user/regulator awareness of the important components of relevant resource management laws and regulations	8	*	*						1								1	1	1	1	Survey and intervies data	Surveys and interviews
310	The number of infringements	8	*							1	1	1						1	1	1	1	Evidence of infringements (physical evidence in field, community reports, official records)	Establish agreed acceptable level and calcualte the difference annually, or at an interval agreed with stakeholders.
311	Percentage of arrests (protected area infringement, trade of endangered wildlife, bushmeat) leading to conviction	8		*						1								1	1	1	1	Field and official/court reports	Calcualte from field and official/court reports
312	Change of percent of repeat offenders appearing in court	8	*							1								1	1	1	1	Field and official/court reports	Calcualte from field and official/court reports
313	Proportion of budget allocated to highest priority conservation management areas/functions	8	*							1	1	1		1				1	1	1	1	Budget documents	identify highest priorities and revies budget allocation annually.
314	Change of sustainability of funding for management	8	*							1								1	1	1	1	Information on (proposed or actual) management funding sources.	Review information annually or less often
315	Availability and timeliness of release of funds	8	*							1	1	1		1				1	1	1	1	Annual budget. Local financial records. Results of interviews with local management staff.	Calculate from official records and interview results.
316	Change of extent to which field and local management staff are involved in, and understand, the budgetary process	8	*							1								1	1	1	1	Results of interviews with local management staff.	Interviews with local management staff
317	The quality and/or quantity of facilities and equipment	8	*							1	1	1						1	1	1	1	Management records, inventory	Identify the equipment and facilities needed, and available
318	Number of trained staff in relevant agencies or areas (needed vs actual)	8	*							1								1	1	1	1	Staffing levels	Calculate necessary staffing levels and check actuall staffing levels annually.
319	The rate of turnover of staff at a site	8	*							1	1	1		1				1	1	1	1	Staff records	Calcualte from official records
320	The average performance rating of staff at a particular location	8	*							1	1	1		1				1	1	1	1	Results of individual performance evaluations (duty statements; training history; work programs; fiel patrol records; interview results)	Develop and use a performance rating system and update ratings every 1-2 years.
321	Average amount of time (person-days of	8	*							1	1	1	1	1	1		1	1	1	1	1	Time sheets and fiel reports	Calcualte field time

No.	Indicator/verifier	Source	Level of biol. org E	S	G	Indicator type D	P	S	I	R	Suitability				EW	Thematic area AG	DL	FO	IW	MC	Mt	Data sets	Methodology
	protected area staff) spent in the field																						
322	Existence of representative coordinating or management body which involves key stakeholders	8	*							1								1	1	1	1	Project/government records, community interviews	Examine records to conduct interviews.
323	Existence of formal conservation agreements	8	*							1	1	1	1	1				1	1	1	1	Project/government records, community interviews	Examine records to conduct interviews.
325	Budget allocated to monitoring, or number of staff trained in monitoring	8	*							1	1	1	1				1	1	1	1	1	Results of review of budget, staffing, management systems	Review budget, staffing and management systems annually or less frequently.
326	Status of monitoring information management system	8	*							1							1	1	1	1	1	Management systems	Review of existing systems
327	Integration of biodiversity monitoring into the routine duties of field staff	8	*							1	1	1	1	1			1	1	1	1	1	Annual work programs and patrol reports	Review annual work programms and patrol reports.
328	Extent and timeliness of implementation of scheduled/planned activities	8	*							1	1	1					1	1	1	1	1	Management records	Calculate wether management bodies are meeting agreed targets.
329	Number and nature of threats to site	8	*							1	1	1	1				1	1	1	1	1	Recorded evidence of unlawful activity, field reports and aerial surveys, results of threat review, new development plans.	Calculate form official reports. Carry out threat review.
331	Existence of an agreed procedure for conflict resolution on natural resource management issues	8	*							1	1						1	1	1	1	1	Project or government records, documentation of traditional resource management regime	Review records and documents, interviews.
332	Change of proportion of conflicts which are successfully resolved	8	*							1							1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.
333	Reduced conflicts over access or use rights	8	*							1	1	1					1	1	1	1	1	Project and government agency records, interview results, PRA results.	Review records, carry out interviews and PRA.
334	Degree of tolerance of wildlife on community land	8	*	*						1	1						1	1	1	1	1	Community and management records.	Review records, carry out interviews and PRA.
349	Existence of institutional capacity, policy and regulatory framework for the planning, management and conservation of biological diversity	9	*							1	1	1	1	1			1	1	1	1	1		
356	International conventions acceeded to	9	*							1	1						1	1	1	1	1		
357	NGOs programmes and action plans	9	*							1						1	1	1	1	1	1		
362	Endangered species with plans of action (all categories of endangerment, and all types of plans of action)	9	*							1	1			1			1	1	1	1	1		
392	Existence of procedures for identifying endangered, rare, and threatened species	9		*						1	1					1	1	1	1	1	1		