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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;

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- (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).

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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.

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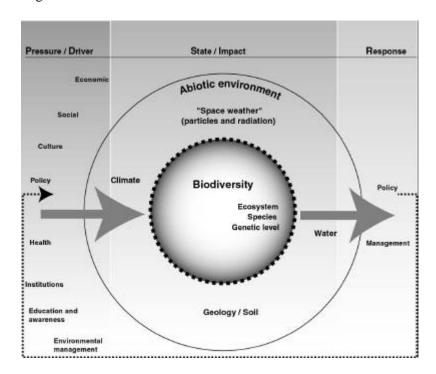


Figure 1. Graphic model of types of indicators following the DPSIR (driver-pressure-state-impact-response) model.

- 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

<u>1</u> 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 σ 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 driv | er indicators | l I |

| 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

| 2400 tions rotating to process a maiotatore | | |
|---|---|------------------|
| 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? | |

| 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? | |

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 | · |
| 25 | Species with decreasing populations Species richness (number, number per unit area, number per habitat area |
| - | |
| 23 | Density of road network |
| 23 | Recorded species present by group |
| _ | 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 |
| 10 | Sex ratio, age distribution and other aspects of population structure for sensitive species, |
| 19 19 | keystone species, and other special interest species |
| 18 | Indigenous species present by group Change in number and/or distribution of keystone or indicator species |
| - | |
| 18 17 | Threatened species with viable ex-situ populations Change in habitat boundaries |
| - | |
| 17 | Number of introduced species and genomes Change in composition of angeling quartime |
| 16 14 | Change in composition of species overtime |
| - | 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 |
| | Representativeness of intra-specific variability of endangered and economically important |
| 7 | 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 |
| - | Percentage of area dominated by non domesticated species occurring in patches greater |
| 2 | than 1 000 sq. km. |
| 1 | Frozen ground activity |
| Parties | Forest biodiversity |
| using | Forest blodiversity |
| indicator | |
| n = 52 | |
| | Total forest area |
| 43 | Total forest area as a percentage of total land area |
| | Percentage forest cover by forest type (primary, secondary or plantation) |
| | List of flora and fauna |
| 36 | Percentage protected area of total forest area |
| | Reforested and afforested areas |
| 30 | Forest area change by forest type (primary, secondary or plantation) |
| | Number of extinct, endangered, threatened, vulnerable and endemic forest dependent |
| 30 | species by group (e.g. birds, mammals, vertebrates, invertebrates) |
| | 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 |
| | Area and percentage of forest area affected by anthropogenic effects (logging, harvesting |
| 27 | for subsistence). |
| 27 | Absolute and relative abundance, density, basal area, cover, of various species |
| | Percentage forest managed for wood production |
| | Existence of procedures for identifying endangered, rare, and threatened species |
| | Number of threatened, keystone, flagship species |
| | Existing strategies for in situ/ex situ conservation of genetic variation within commercial, |
| 25 | endangered, rare and threatened species of forest flora and fauna. |
| | Percentage protected area with clearly defined boundaries |
| | Annual volume and area of timber harvested-indigenous and plantation |
| | Area and percentage of forest area affected by natural disasters (insect attack, disease, |
| 22 | fire and flooding) |
| | Number and extent of invasive species |
| | |

| | Percentage forest protected areas by forest type by age, class, and success ional stage) |
|--|---|
| | Wood harvesting intensity |
| 21 | Managed forest ratio |
| • | Changes in the proportions of stands managed for conservation and utilization of genetic |
| | resources (gene reserves, seed collection stands, etc. |
| | Per capita wood consumption |
| | Extent of mixed stands |
| | Estimate of carbon stored |
| | Percentage forest land managed for recreation and tourism to total forest area |
| | Number of forest dependent species whose populations are declining |
| | Fragmentation of forests |
| | Threatened tree species as a percentage of the 20 most used for commercial purposes |
| | Area and extent of degraded lands reclaimed through forest operations |
| | Area and percentage of forests managed for catchment protection Self-regenerating area as a percentage of total area |
| 14 | Population levels of representative species from diverse habitats monitored across their |
| 13 | range |
| - | Self-regenerating area per habitat type |
| | Ratio between exotic species and native species in plantation area |
| | Forest conversion affecting rare ecosystems by area |
| | Area and length and numbers of biological corridors |
| | Relationship between forest cover and frequency of flooding |
| Parties | Agricultural Biodiversity |
| | 1-8-1-0-1-0-1-0-1-0-1-0-1-0-1-0-1-0-1-0- |
| using | |
| indicator | |
| indicator n = 52 | The of equivalent meeticides |
| indicator n = 52 35 | Use of agricultural pesticides Agricultural group by group (carpal, oil group, foreign woodlands) |
| indicator n = 52 35 34 | Agricultural area by crops (cereal, oil crops, forage, woodlands) |
| indicator n = 52 35 34 32 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) |
| indicator n = 52 35 34 32 29 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) |
| indicator n = 52 35 34 32 29 22 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food |
| indicator n = 52 35 34 32 29 22 21 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use |
| 35 34 32 29 22 21 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony |
| indicator n = 52 35 34 32 29 22 21 16 15 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones |
| indicator n = 52 35 34 32 29 22 21 16 15 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before |
| indicator n = 52 35 34 32 29 22 21 16 15 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops |
| indicator n = 52 35 34 32 29 22 21 16 15 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before |
| indicator n = 52 35 34 32 29 22 21 16 15 15 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates) |
| indicator n = 52 35 34 32 29 22 21 16 15 14 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, |
| indicator n = 52 35 34 32 29 22 21 16 15 14 13 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates) Accession of crops and livestock in ex-situ storage (number or percentage) |
| indicator n = 52 35 34 32 29 22 21 16 15 14 13 13 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates) Accession of crops and livestock in ex-situ storage (number or percentage) Number of vertebrate species using habitat on agricultural land by species. |
| indicator n = 52 35 34 32 29 22 21 16 15 14 13 13 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates) Accession of crops and livestock in ex-situ storage (number or percentage) Number of vertebrate species using habitat on agricultural land by species. Accessions of crops generated in the past decade (per cent) |
| indicator n = 52 35 34 32 29 22 21 16 15 14 13 13 11 9 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates) Accession of crops and livestock in ex-situ storage (number or percentage) Number of vertebrate species using habitat on agricultural land by species. Accessions of crops generated in the past decade (per cent) Differences in species diversity and abundance of arthropods and earthworms in organically and conventionally cultivated arable land Coefficient of kinship or parentage of crops |
| indicator n = 52 35 34 32 29 22 21 16 15 14 13 13 11 9 6 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates) Accession of crops and livestock in ex-situ storage (number or percentage) Number of vertebrate species using habitat on agricultural land by species. Accessions of crops generated in the past decade (per cent) Differences in species diversity and abundance of arthropods and earthworms in organically and conventionally cultivated arable land |
| indicator n = 52 35 34 32 29 22 21 16 15 14 13 13 11 9 6 6 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates) Accession of crops and livestock in ex-situ storage (number or percentage) Number of vertebrate species using habitat on agricultural land by species. Accessions of crops generated in the past decade (per cent) Differences in species diversity and abundance of arthropods and earthworms in organically and conventionally cultivated arable land Coefficient of kinship or parentage of crops Rate of change from dominance of nondomesticated species to domesticated species Inbreeding/outbreeding rate |
| indicator n = 52 35 34 32 29 22 21 16 15 14 13 13 11 9 6 6 6 | Agricultural area by crops (cereal, oil crops, forage, woodlands) Change in area of agricultural land (conversion to or from agriculture) Agricultural area (intensively farmed, semi-intensively farmed and uncultivated) Species diversity used for food Intensification and extensification of agricultural land use Erosion/Loss of genetic diversity patrimony Replacement of landraces with few imported ones Crops/livestock grown as a percentage of number of 30 years before Replacement of indigenous crops Number of species threatened by agriculture by group e.g. birds, mammals, vascular plants, vertebrates, invertebrates) Accession of crops and livestock in ex-situ storage (number or percentage) Number of vertebrate species using habitat on agricultural land by species. Accessions of crops generated in the past decade (per cent) Differences in species diversity and abundance of arthropods and earthworms in organically and conventionally cultivated arable land Coefficient of kinship or parentage of crops Rate of change from dominance of nondomesticated species to domesticated species |

| Parties | Inland Waters Biodiversity |
|-----------------|---|
| using | mand Waters Diodiversity |
| indicator | |
| n = 52 | |
| | Surface water quality: Nitrogen, Dissolved oxygen, pH, pesticides, heavy metals, |
| 33 | 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 |
| | Number of extinct, endangered, threatened/endangered/vulnerable/ endemic inland water |
| | species by group e.g. birds, aquatic mammals, invertebrates, amphibians, vascular plants, |
| 22 | 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 | Coastal and Marine Biodiversity |
| using indicator | |
| n = 52 | |
| 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 agrienvironmental 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.
- Towards environmental pressure indicators for the EU: Indicator definition. Edited by P.E.M. Lammers and A.J. Gilbert, 1999.

| | | | eve | | | | | | | | | Ε | The | nat | ic a | rea | | | | |
|-------|---|------|-----------|-----------------|--------------|--|----------|----------|---------------|--------------------|-----------|---------------|-----------------------------------|---------|-----------------------------|-----------------------------------|--------------------------------------|-------------------------------|--|--|
| No | Indicator/verifier | Souk | oiol. | org | Indic D P | ator | typ | e e | Sui | tabi | litv | W | AG | DL | FΟ | IW N | ЛС І | Mt | Data sets | Mathadalagy |
| No. | indicator/verifier | rce | E 5 | <u>G</u> SI⊜ | P 5 | <u>' </u> | <u> </u> | | | | , ই ই | ρc | _ | | | | _ | _ | | Methodology |
| | | | Ecosystem | Genetide | Driver | State | Impact | Response | Measurability | Representativeness | Feasibili | Early warning | Agricultural biological diversity | diversi | Forest biological diversity | Inland water biological diversity | Marine and coastal biological divers | Mountain biological diversity | | |
| Drive | I rindicators of agricultural biological diversity | | | | | | | | | | | | | | Ш | | | | | |
| | Percentage of (near) natural vegetation cover | 2 | * | | 1 | | | | 1 | 1 | Τ | 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 |
| | Use of agricultural pesticide | 2 | * | | 1 | | | | 1 | 1 | | 1 | 1 | | | | | | | Derived from sales and expressed as active ingredients |
| | Dust storms | 2 | * | | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | |
| | Frozen ground activity Groundwater quality (nitrates, salinity, toxicants) | 2 | * | | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | |
| | Ground water level | 2 | * | 1 | 1 | | | | 1 | 1 | 1 | Ė | 1 | 1 | 1 | Ť | | 1 | | |
| | Karst activity | 2 | * | | 1 | | | | 1 | 1 | Ť | | 1 | 1 | 1 | 1 | | 1 | | |
| | Slope failure (landslides) | 2 | * | | 1 | | | | 1 | 1 | 1 | | 1 | | 1 | | | 1 | | |
| | Soil and sediment erosion | 2 | * | 1 | 1 | | | | 1 | 1 | T | | 1 | 1 | 1 | | 一 | 1 | | |
| | Soil quality | 2 | * | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 寸 | 1 | | |
| | sure 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 | | |

| | | I. | | | | | | | | ji. | | | | | | | Page 2 |
|----|--|-------|----------|-----|-------------------|------------------|---|------|------|-----------|---|-------|----------|--------------|------|------|-------------|
| | | | evel | | | | | | | | | nem | atic | area | 3 | | |
| l | | Soubi | iol. c | org | Indicato D P S | r type | ; | Suit | ahil | it, \ | N | AG Γ | OI FO | O IW | MC. | Μt | Data sets |
| | | | <u> </u> | G | D P S | | R | Jum | wiii | uy | Ľ | 710 L | <i>,</i> | <i>3 111</i> | 1010 | 1711 | Methodology |
| | Rate of change from dominance of non- | | | | | | | | | | | | | | | | |
| | domesticated to domesticated species | 2 * | * | | 1 | \perp | | 1 | 1 | Ш | | 1 | 1 | | 1 | | |
| | Percentage of area dominated by non- | | | | | | | | | | | | | | | | |
| | domesticated species occurring in patches | | | | | | | | | | | | | | | | |
| 47 | greater than 1000 sq. km | 2 * | * | | 1 | | | 1 | 1 1 | 1 | | 1 | | | | | |
| | Population growth and fluctuation trends of | | | | | | | | | | | | | | | | |
| | special interest species | 2 * | * | | 1 | | | 1 | 1 | Ш | | 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 | | | | | |
| | Presence of taxa indicators of environmental | | | Ī | | | | | | П | | | | | | | |
| 59 | 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 | |
| | Indigenous species present (by group) | 2 | * | Ī | 1 | | | | | П | | 1 | 1 | 1 | 1 | 1 1 | 1 |
| | Number of non-indigenous species present (by | | | | | | | | | | | | Ť | | | | |
| | taxonomic group) | 2 | * | | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 . | 1 . | 1 1 | 1 |
| | Change of number of species (species richness) | | | | | | | | | | | | | | l | | |
| 65 | 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 | |
| | Species with smaller population size vs larger | | | | | | | | | П | | | | | | | |
| | population size | 2 | * | | 1 | | | 1 | 1 | | | 1 | 1 | 1 | 1 . | 1 | |
| | Spatial differences in the number of rare vs | | | Ī | | | | | | | | | | | | | |
| | common species | 2 | * | | 1 | | | 1 | 1 | | | 1 | 1 | 1 | 1 . | 1 | |
| | Spatial differences in the number of restricted vs | | | | | | | | | | | | | | | | |
| 70 | wide-range species | 2 | * | | 1 | | | 1 | 1 | | | 1 | 1 | 1 | 1 . | 1 | |
| | Representativeness of intraspecific variability of | | | | | | | | | П | | | | | | | |
| 71 | endangered and economically important species | 2 | * | | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 . | 1 | |
| | Percentage change of number of native species | | | | | | | | | \prod | | T | | | | | |
| 73 | of grasses and herbs | 2 | * | | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 | | | |
| | Diversity of native fauna | 2 | * | | 1 | | | | | \coprod | | 1 | 1 | 1 | 1 | 1 | |
| | Species richness (number, number per unit | | | | | | | | | П | | | | | | | |
| | area, number per habitat type) | 2 | * | * | 1 | | | | | Ш | | 1 | 1 | 1 | 1 . | 1 1 | 1 |
| | Number of species in taxonomic group | | | | | | | | | | | | T | | | | |
| 77 | threatened with extirpation | 2 | * | * | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 . | 1 1 | 1 |
| | Number of endemic species in taxonomic group | | | | | | | | | | | | | | | | |
| 78 | threatened with extinction | 2 | * | * | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 ' | 1 ' | 1 | |
| 79 | Species risk index | 2 | * | * | 1 | | | | | Ш | | 1 | 1 | 1 ' | 1 . | 1 | |
| 80 | Species with stable or increasing populations | 2 | * | * | 1 | | | | | \prod | | 1 | 1 | 1 | 1 | 1 | |

| | | | Level | | | | | Г | | | | The | mat | tic a | rea | | | | |
|-------|---|-----|----------|-----|--------------|------------|-----|----|------|-------|-----|-----|------|-------|------|------|----|-------------|--|
| N. | la di a chambra viti a n | Sou | biol. | org | Indication P | or ty | /pe | Su | itah | ilit\ | , W | AG | G DL | FO I | IW N | 1C N | Лt | Data sets | |
| | Indicator/verifier (number or percent) | rce | <u> </u> | T | U P | <u>5 1</u> | Т | | П | T | | | ı | П | 1 | - | - | Methodology | |
| | Species with decreasing populations (number or | | + | + | | | + | | H | + | | | | H | | | | | |
| | percent) | 2 | * | * | 1 | | | | | | | 1 | 1 1 | 1 | 1 | 1 | | | |
| 84 | Number of threatened species in taxonomic groups in <i>ex situ</i> collections | 2 | * | * | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 1 | 1 | 1 | 1 | | | |
| | Number of threatened species in taxonomic group with viable <i>ex situ</i> populations | 2 | * | * | 1 | | | 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 | 1 | | | | | | |
| State | indicators of agricultural biological diversity | | | | | | | | | | | | | | | | | | |
| 94 | Inbreeding/outbreeding rate | 2 | | * | | 1 | | | | | | 1 | 1 | | | | | | |
| | Rate of genetic interchange between populations (measured by rate of dispersal and subsequent reproduction of migrants) | | | * | | 1 | | | | | | 1 | | | | | | | |
| | Number of crops under cultivation (>100 ha) | 3 | | * | | 1 | | 1 | 1 | 1 | 1 | 1 | i | | | Ť | | | |
| | 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 | ı | | | | | | |
| 99 | Number of cultivars per crop | 3 | | * | | 1 | | 1 | 1 | 1 | 1 | 1 | ı | | | | | | |
| | Acreage of each cultivar in a given year or period | 3 | | * | | 1 | | 1 | 1 | 1 | | 1 | 1 | | | | | | |
| 101 | Number of animal species | 3 | | * | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | |
| 102 | Number of rare animal species | 3 | | * | | 1 | | 1 | 1 | | | 1 | 1 | | | | | | |
| 103 | Number of animal breeds (richness) | 3 | | * | | 1 | | 1 | 1 | | | 1 | 1 | | | | | | |
| 104 | Number of heads per breed (abundance) | 3 | | * | | 1 | | 1 | 1 | | | 1 | 1 | | | | | | |
| 105 | Diversity between breeds | 3 | | * | | 1 | | 1 | | | | 1 | I | | | | | | |
| 106 | Number/size rare breed collections | 3 | | * | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | |
| 107 | Number of wild relatives of cultivated species | 3 | | * | | 1 | | 1 | 1 | 1 | 1 | 1 | I | | | | | | |
| 108 | Number of threatened or extinct wild relatives or weedy species | 3 | | * | | 1 | | 1 | 1 | 1 | 1 | _1 | 1 | | | | | | |
| | Distribution of species | 3 | | * | | 1 | | 1 | Ш | | | 1 | I | Ш | | | | | |
| 110 | Ecosystem/habitat quantity (change/loss in area, percent of total country) | 3 | | * | | 1 | | 1 | 1 | | | 1 | 1 | | | | | | |
| | Ecosystem quality (composition; function; change of variable from baseline to current state; species richness or ecosystem structure; | | | * | | 1 | | | | | | 1 | | | | | | | |

| | T | I. | | | d | | | _ | | | | | T1. | | _ | | | | | Page 25 |
|-----|---|------------|--------------|-----|---------------|----------|-------------|-------|--------|------|-----|---|------|-------|-------|-----|----------|----------|-----------|-------------|
| | | | Leve | | | | | | | | | | Then | natio | c ar | ea | | | | |
| No. | Indicator/verifier | Sou rce | 0101. F S | org | Indica D P | tor S | type I I | S_i | uita | ıbil | ity | W | AG | DL F | FO II | W M | IC N | Лt | Data sets | Methodology |
| | fragmentation) | | T | Ť | | Ŭ | İ | | | I | Π | | | | T | | | T | | |
| | Change of sum of all recognized | | | | | | | | + | + | | | | + | | - | 1 | | | |
| | varieties/breeds over time (1, 5, ten year | | | | | | | | | | | | | | | | | | | |
| 112 | periods) | 3 | | * | | 1 | | | 1 | 1 . | 1 1 | | 1 | | | | | | | |
| | Change of share of different livestock | | | | | | | | | | | | | | | | | | | |
| | breeds/plant varieties of total population or total | | | | | | | | | | | | | | | | | | | |
| | production over time | 3 | | * | | 1 | | | 1 | 1 | | | 1 | | | | | | | |
| | Number of crops conserved (semen, ova, | | | | | | | | | | | | | | | | | | | |
| | embryos, somatic cells) | 3 | | * | | 1 | | | 1 | 1 ' | 1 1 | | 1 | | | | | | | |
| | 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 | | | | | | | |
| | 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 | | | | | | | |
| | Number of threatened or extinct species of given | | | | | | | | | | | | | | | | | | | |
| | taxonomic group per country | 3 | * | | | 1 | | | 1 | 1 ' | 1 1 | | 1 | | | | | | | |
| | Number of threatened agro-ecosystem types as | | | | | | | | | | | | | | | | | | | |
| 120 | percent of total country | 3 | * | | | 1 | | | 1 | 1 ' | 1 1 | | 1 | | | | _ | | | |
| | Change of number of wild species e.g. over ten | | | | | | | | | | | | | | | | | | | |
| 121 | years | 3 | * | 4 | | 1 | | | 1 | 1 ' | 1 1 | | 1 | | _ | _ | 4 | 4 | | |
| | Net change of endangered species (number of | | | | | | | | | | | | | | | | | | | |
| | species less danger - number of species more | | * | | | | | | | | | | | | | | | | | |
| 122 | danger) | 3 | _ | + | | | | | + | + | - | | _ | - | _ | _ | + | - | | |
| 100 | Population trends of selected endangered | 1 | * | | | 1 | | | 1 | 1. | 1 1 | | 1 | | | | | | | |
| 123 | species Funding of conservation and sustainable use at | 3 | + | + | | | | | + | ╫ | 1 1 | | - 1 | | - | | + | | | |
| 12/ | national level | 2 | * * | * * | | 1 | | | 1 | 1 | 1 | | 1 | | | | | | | |
| 124 | Implementation of international standards at | . 3 | + | + | | | | | ╫ | ╁ | + | | _ | - | - | - | \dashv | - | | |
| 125 | national levels | 3 | * * | * * | | 1 | | | | | | | 1 | | | | | | | |
| .20 | Development and application of | | 1 | 1 | | | | | \top | 1 | | | | | | 1 | T | 1 | | |
| | methods/strategies to conserve and ensure | | | | | | | | | | | | | | | | | | | |
| | sustainable use (collection; regeneration; storage | | | | | | | | | 1 | | | | | | | | | | |
| | practices; storage facilities) | 3 | * * | * * | | 1 | | | 1 | 1 | | | 1 | | | | | | | |
| | International cooperation | 3 | * * | * * | | 1 | | | | | | | 1 | 一 | | | 1 | T | | |
| | International responsibility e.g. <i>ex situ</i> | | 1 | T | | | | | | T | | | | 寸 | 1 | 寸 | 1 | Ī | | |
| | conservation of genetic resources; in situ in | | | | | | | | | | | | | | | | | | | |
| 128 | protected areas/on farm | 3 | * * | * * | | 1 | | | | | | | 1 | | | | | | | |

| No | Indicator/verifier | | evel | | f Indica D P | ator | type | , Su | ita | bili | | | hem AG E | | | | C Mt | Data sets | Methodology |
|-----|---|------|----------|---|--------------------|------|------|------|-----|------|---|---|--------------------|---|---|---|------|-----------|---|
| | Establishment and accessibility of | 100 | <u> </u> | T | U F | Ĭ | | | | | H | ٠ | | Т | I | Τ | T | | wethodology |
| | documentation systems | 3 | * * | * | | 1 | | | | | П | | 1 | | | | | | |
| | Net population migration rate | 4 | | T | | 1 | | 1 | 1 | 1 | П | | 1 | 1 | 1 | 1 | 1 | | |
| | Total fertility rate | 4 | | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Population density | 4 | | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Rate of growth of urban population | 4 | | T | | 1 | | 1 | 1 | | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Percent of population in urban areas | 4 | | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Share of natural-resource intensive industries in manufacturing value added [?] | 4 | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Environmental protection expenditures as a percent of GDP | 4 | | | | 1 | | 1 | 1 | | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Land use change | 4 | | | | 1 | | 1 | 1 | | | | 1 | 1 | 1 | | | | |
| 152 | Changes in land condition | 4 | | | | 1 | | | | | | | 1 | 1 | 1 | | | | |
| | 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 | | | | |
| | Area of land affected by desertification | 4 | | Ì | | 1 | | 1 | 1 | | | | 1 | 1 | 1 | | Î | | |
| 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 | | | | | | |
| | 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 | | | |
| 170 | Consumption of ozone depleting substances (Chlorofluorocarbons, Halons, chlorinated carbons, HFCFCs)) | | | | | | | | | 4 | 1 | | | 1 | 1 | 1 | | | Chlorofluorocarbons: CFs, CF2Cl2 (CFC-12), CFCl3 (CFC11), CF2ClCF2Cl (CFC-114), CF3CF2Cl (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; |

| | | | _ | | | | | | | | | | | | | | | | | | Page 27 |
|-----|--|----------|----------|-------|------|-------------|------------|-----|------|------|------|------------------|---|----------|---------|-------|-------|----------|-----|------------|------------------------------------|
| | | | | /el | | | | | | | | | | hem | | | | | | | |
| ١ | | Sou | bio | I. or | g In | idicat P | or t | ype | C, | uita | hil | _{it} ., | N | AG I | DI F | -0 II | N M | IC N | Иt | Data sets | L |
| No. | Indicator/verifier | rce | E | S | G D | <u> P</u> | <u>S I</u> | l F | ام ج | ıuu | viii | uy | | 710 2 | <i></i> | - 11 | 7 707 | - N | VIL | 2 4.4 55.5 | Methodology |
| | | | | | | | | | | | | Ш | | | | | | | | | HCHCs: CHF2CI (HCFC-22), CH2FC |
| | | | | | | | | | | | | Ш | | | | | | | | | (HCFC-31), CHFCl2 (HCFC-21); Methy |
| | | | | | | | | _ | | - | - | Н | | _ | _ | _ | 4 | | | | bromide: CH3Br |
| 47 | Ambient concentrations of pollutants in urbar | | | | | | | | | | | | | | | | | | | | |
| | areas | 4,11 | | | | | 1 | _ | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 4 | | | CO2, SO2, Nox, PM10, VOC, Pb |
| 175 | Expenditure on air pollution abatement | 4 | | | | | 1 | _ | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | | | |
| 47. | Existence of national biosafety regulations of | 1 . | | | | | | | | | | Ш | | | | | | | | | |
| | guidelines | 4 | | | | | 1 | _ | | 1 | | Н | | 1 | _ | - | 1 | 1 | | | |
| 177 | Chemically induced acute poisonings of humans | | | | | | 1 | | | 1 | | Ш | | 1 | _ | 1 | 1 | | | | |
| | Number of chemicals banned or severly | / | | | | | | | | | | Ш | | | | | | | | | |
| | restricted | 4 | | | | | 1 | _ | | 1 | - | Н | | 1 | _ | 1 | 1 | | | | |
| | Generation of radioactive wastes | 4 | | ľ | * | | 1 | | | 1 ' | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | | |
| 180 | Sustainable development strategies | 4 | | | | | 1 | | | | | Ш | | 1 | 1 | | _ | | | | |
| | Programmes of integrated environmental and | k | | | | | | | | | | Ш | | | | | | | | | |
| 181 | economic accounting | 4 | | | | | 1 | | | 1 | | 1 | | 1 | _ | 1 | _ | | | | |
| | Scientists and engineers engaged in research | J | | | | | | | | | | Ш | | | | | | | | | |
| | and development per million population | 4 | | | | | 1 | _ | | 1 | - | Н | | 1 | 1 | 1 | 1 | 1 | | | |
| | Implementation of ratified global agreements | 4 | | | | | 1 | | | | | Ш | | 1 | 1 | 1 | 1 | 1 | | | |
| 185 | Programmes for national environmental statistics | 4 | | | | | 1 | | | | | Ш | | 1 | 1 | 1 | 1 | 1 | | | |
| | Agricultural area per crops (cereal, oil crops, | | | | | | | | | | | Ш | | | | | | | | | |
| 186 | forage, woodlands) | 5 | * | | | | 1 | | | 1 1 | 1 1 | 1 | | 1 | | | 4 | | | | |
| | Agricultural area (intensively farmed, semi | 1 | | | | | | | | | | Ш | | | | | | | | | |
| 187 | Intensively farmed and uncultivated) | 5 | * | | | | 1 | _ | | 1 1 | 1 1 | 1 | | 1 | _ | _ | 4 | | | | |
| 100 | Change of area of agricultural land (conversion | _ | * | | | | | | | | | | | | | | | | | | |
| | or from agriculture) | 5 | * | | | | 1 | | | 1 | 1 1 | Н | | 1 | | | + | - | | | |
| | Use of pesticides | 5 | | | | | 1 | | | 1 | | Ш | | 1 | _ | | 4 | 4 | | | |
| 190 | Use of fertilizers | 5 | * | | | | 1 | | | 1 | | Ш | | 1 | _ | | _ | | | | |
| | Afforestation of agricultural land (excluding | _ | | | | | | | | | | | | | | | | | | | |
| 191 | hedges) | 5 | * | | | | 1 | _ | | 1 1 | 1 1 | 1 | | 1 | _ | _ | 4 | | | | |
| | Number of species threatened by agriculture by | / | | | | | | | | | | Ш | | | | | | | | | |
| 400 | group (e.g. birds, mammals, vascular plants, | _ | | _ | | | | | | | | | | | | | | | | | |
| 192 | vertebrates, invertebrates) | 5 | | ^ | | | 1 | | | 1 | 1 1 | | | 1 | | | | | | | |
| 100 | Number of vertebrate or invertebrate species | _ | | * | | | 1 | | | | | | | 1 | | | | | | | |
| 193 | Busing agricultural habitat | 5 | \vdash | | | | - | | | 1 | | Н | | + | | - | + | \dashv | | | |
| 10 | Diversity and abundance of arthropods and | , _ | | * | | | 1 | | | 1. | 1 1 | Н | | 1 | | | | | | | |
| 194 | earthworms in cultivated arable land | 5 | \vdash | | | | + | + | | + | 1 | Н | | \dashv | + | - | + | \dashv | | | |
| 100 | Rate of chance from dominance of non | - | | * | | | 1 | | | 1 . | | | | 1 | | | | | | | |
| 198 | domesticated species to domesticated species | 5 | | | | | | | | II . | II. | | | - II | | | | | | | |

| | | | eve | | | | | | | | | | The | mat | tic a | rea | | | |
|------|--|------|-------|-----|----------------|----------|----------|----|------|-----|-------|---|----------|--------------|----------|----------|-----|-----|-------------|
| 1 | | Sout | oiol. | org | Indicat D P | or | type | S | hiit | ahi | litv | W | A.C. | ; DI | FΟ | IW N | ИC. | Μt | Data sets |
| | | rce | E S | G | D P | <u>S</u> | <u> </u> | RP | uu | uvi | ııı y | | /10 | | T | | ,,, | | Methodology |
| | Species diversity used for food | 5 | * | - | | 1 | | | 1 | 1 | 1 | 1 | _ 1 | | - | | | | |
| 197 | Erosion/loss of genetic patrimony | 5 | * | | | 1 | | | 1 | | _ | | 1 | | | | | | |
| | Accessions of crops and livestock in ex situ | | | | | | | | | | | | | | | | | | |
| 198 | storage (number or percent) | 5 | _ | * | | 1 | | | 1 | 1 | 1 | 1 | 1 | | | | | | |
| | Accessions of crops regenerated in the past | | | ١. | | | | | | | | | | | | | | | |
| 199 | decade (percent) | 5 | - | | | 1 | | | 1 | 1 | 1 | 1 | 1 | | | | | | |
| 200 | Crops (livestock) grown as a percentage of | _ | | | | 1 | | | 1 | 1 | | | Ι, | | | | | | |
| 200 | number 30 years before | 5 | - - | - | | - 1 | | | 4 | + | + | I | <u>'</u> | | | | | | |
| 201 | Replacement of land races with few imported ones (animals) | E | | * | | 1 | | | 1 | 1 | | 1 | 1 | | | | | | |
| | | | + | * | | 1 | | | + | ╫ | + | I | <u> </u> | | | | | | |
| | Replacement of indigenous crops | 5 | | | | I | | | | | | | _ ' | | <u> </u> | | | | |
| Impa | act indicators of agricultural biological diversity | | Т | T | | | | | Т | T | T | | I | Τ | Т | <u> </u> | | | |
| 22 | Streamflow: velocity, volume per time etc. | 2 | * | | | | 1 | | 1 | 1 | 1 | | Ι, | | 1 | 1 | | 1 | |
| | specify seasonality | 2 | * | - | | | 1 | | 1 | 1 | 1 | | | | 1 | | | 1 | |
| | Surface displacement Volcanic unrest: area newly covered by | | | - | | | _ ! | | 4 | + | + | | <u>'</u> | | | | | I | |
| 2/ | lava;area newly covered by ashes | 2 | * | | | | 1 | | 1 | 1 | 1 | 1 | 1 | | 1 | | | 1 | |
| | Total area of a particular habitat/vegetation type | 2 | * | - | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 1 | 1 | 1 | 1 | 1 |
| 21 | Size of largest block of each habitat/vegetation | | + | - | | | - | | + | ╫ | + | I | <u>'</u> | | ' | | ı | ı | |
| 25 | Size of largest block of each habitativegetation. | 2 | * | | | | 1 | | 1 | 1 | 1 | 1 | Ι, | 1 | 1 1 | 1 | 1 | 1 | |
| | Mean nearest distance between blocks of a | | + | + | | | - | | Ť | ╁ | ╁ | | | ' | + | H | | _ | |
| 20 | particular habitat type | 2 | * | | | | 1 | | 1 | 1 | 1 | | l 1 | 1 | 1 1 | 1 | 1 | 1 | |
| | Average width of break in an identified habitat | | 1 | + | | | | | Ť | Ť | Ť | | | | | H | | | |
| 30 | corridor | 2 | * | | | | 1 | | | | | | 1 | 1 | 1 1 | 1 | 1 | 1 | |
| | Number and distribution of keystone or indicator | | | | | | | | | | | | | | | | | | |
| 33 | Species | 2 | * * | | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 | |
| | Change of presence, location, area, number of | | | | | | | | | | | | | | | | | | |
| 35 | invasive plant or animal species | 2 | * * | | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 | 1 |
| 39 | Livestock levels per sq. km | 2 | * | | | | 1 | T | 1 | 1 | | 1 | 1 | 1 | 1 1 | | | 1 | 1 |
| 40 | Number of introduced species and genomes | 2 | * * | | | | 1 | | 1 | 1 | | | L 1 | 1 | 1 1 | _ 1 | 1 | _ 1 | |
| | Accessions of crops and livestock regenerated | | | | | | | | Ī | | | | | | | | | | |
| 90 | in the past decade (percent) | 2 | | * | | | 1 | | 1 | 1 | 1 | 1 | 1 | | | | | | |
| | Crops (livestock) grown as a percentage of | | | | | | | | T | | | | | | | | | | |
| 91 | number 30 years before | 2 | | * | | | 1 | | 1 | 1 | 1 | 1 | 1 | | | | | | |
| | Rate of genetic interchange between populations | | | | | | | | | | | | | | | | | | |
| | (measured by rate of dispersal and subsequent | | | | | | | | | | | | | | | | | | |
| 205 | reproduction of migrants) | 5 | | * | | | 1 | | | | | | 1 | | | | | | |

| | T | | lı | 101 | o el | | | | | | | Г | Ther | wet: | 0.05 | 00 | | 1 | Page 29 |
|-----|---|----------|-----|----------|--------------|-------|------------|---|---------|------|------|----|------|------|-------|-----|----|---|---------------|
| | | Sau | | /el | | iooto | - t | | | | | | _ | nau | c ar | ea | | | |
| No. | Indicator/verifier | | E | s. or | g Ind G D | P S | rτypε I | R | Suit | abil | lity | VV | AG | DL F | FO II | N M | СМ | Data sets Methodology | |
| | Number of key livestock breeds (native | | | | | | | | | | | | | | | | | | |
| | endangered, native not endangered, non-native) | 6 | Ó | * | | | 1 | | 1 | 1 | 1 ' | 1 | 1 | | | | | | |
| | Share of the three major livestock breeds | | | | | | | | | | | | | | | | | | |
| | (additional information: native, non-native | <u> </u> | | | | | | | | | | | | | | | | | |
| 207 | breeds) | 6 | Ó | * | | | 1 | | 1 | 1 | 1 | | 1 | | | | | | |
| | Native breed's population size and status of | | | | | | | | | | | | | | | | | | |
| 208 | endangerment | 6 | Ó | * | | | 1 | | 1 | 1 | | | 1 | | | | | | |
| 209 | Application of high-selective breeding methods | 6 | Ó | * | | | 1 | | 1 | | | | 1 | | | | | | |
| 210 | Number of breeder's associations (new) | 6 | ò | * | | | 1 | | 1 | | | | 1 | | | | | | |
| | Number of crop species in agricultural use | | | | | | | | | | | | | | | | | | |
| 211 | (new) | 6 | ò | * | | | 1 | | 1 | 1 | 1 | 1 | 1 | | | | | | |
| 212 | Crop species ratio / diversity index (new) | 6 | ò | * | | | 1 | | 1 | | | | 1 | | | | | | |
| | Number of key crop varieties (domestic, non- | - | | | | | | | | | | | | | | | | | |
| 213 | domestic) | 6 | ò | * | | | 1 | | 1 | 1 | 1 | 1 | 1 | | | | | | |
| | Share of the three major crop varieties in seed | | | | | | | | | | | | | | | | | | |
| 214 | production area / diversity index | 6 | | * | | | 1 | | 1 | 1 | 1 | 1 | 1 | | | | | | |
| | Share of genetically heterogenous and | | | | | | | | | | | | | | | | | | |
| 215 | homgenous varieties (new) | 6 | Ó | * | | | 1 | | 1 | | | | 1 | | | | | | |
| | Share of varieties with and without 'evolutionary | 1 | | | | | | | | | | | | | | | | | |
| | potential' (new) | 6 | Ò | * | | | 1 | | 1 | | | | 1 | | | | | | |
| 217 | Number of breeders per crop | 6 | Ó | * | t | | 1 | | 1 | | | | 1 | | | | | | |
| | Absolute and relative abundance, density, basal | | | | | | | | | | | | | | | | | | |
| | area, cover, importance value for various | i | | | | | | | | | | | | | | | | | |
| 225 | species (plants) | 7 | | * | | | 1 | | 1 | 1 | 1 ' | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | | | | | | | | | | | | | | | | | | Remote sensing data (vegetation maps may Manual methods using overlay | maps, or GI |
| 268 | Change of total area of a particular habitat type | 8 | 3 * | | | | 1 | | 1 | 1 | _ | | 1 | 1 | 1 | 1 | 1 | 1already exist for baseline) where feasible | |
| | Change of area of largest block of a particular | | | | | | | | | | | | | | | | | Remote sensing data (vegetation maps may Manual methods using overlay | maps, or GI |
| 269 | habitat type | 8 | } * | | | | 1 | | 1 | 1 | 1 ' | 1 | 1 | 1 | 1 | 1 | 1 | 1already exist for baseline) where feasible | |
| | Change of average size of a particular habitat | | | | | | | | | | | | | | | | | Remote sensing data (vegetation maps may Manual methods using overlay | maps, or GI |
| 270 | type | 8 | } * | | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1already exist for baseline) where feasible | |
| | Change of mean nearest distance between | | | | | | | | | | | | | | | | | Manual methods using overlay | maps, or Gl |
| 271 | blocks of a particular habitat type | 8 | 3 * | Н | | | 1 | | 1 | 1 | _ | | 1 | 1 | 1 | 1 | 1 | 1 Remote sensing data or measured in the field where feasible | |
| | Change of average width of break in an | | | | | | | | | | | | | | | | | Manual methods using overlay | maps, or GIS |
| 272 | identified habitat corridor | 8 | 3 * | \sqcup | | | 1 | | \perp | - | - | | 1 | 1 | 1 | 1 | 1 | 1 Remote sensing data or measured in the field where feasible | |
| | Change of number or total area of protected | | | | | | | | | | | | | | | | | | |
| 273 | areas | 8 | 3 * | \sqcup | | | 1 | | 1 | 1 | 1 ' | 1 | 1 | 1 | 1 | 1 | 1 | 1Spatial plans GIS or overlay maps | |
| | Change of total area of land uses compatible | | | | | | | | | | | | | | | | | Remote sensing data or field repo | |
| 274 | with biodiversity conservation in the monitoring | 8 | 3 * | | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | 1 Area of identified compatible land uses maps are likely to be availab | le from other |

| | | L | evel | of | | | | | | | ΕĪ | Then | natio | are | ea | | | | |
|------|--|------|----------|-------|------------------|----------|---|------|------|----------------|----|------|-------|-------------|-------------|--|----|--|---|
| | | Soub | iol. c | org I | ndicato D P S | r typ | е | Suit | ahil | itv | W | AG | DI F | :0 IV | N M | C.N | 1t | Data sets | L |
| No. | | rce | <u> </u> | GE |) P S | <u> </u> | R | Juu | | ııy | | 7.C | | | | - | | | Methodology |
| | area | | - | ++ | | | | _ | - | \blacksquare | | | | - | _ | - | _ | | agencies |
| 070 | Change of number of keystone or indicator | | | | | | | 4 | 1 . | | _ | 4 | 4 | _ | | | | | Survey of transects or sites, frequency depends |
| 2/8 | species | 8 | | ++ | | - 1 | | - | 1 | | 4 | - II | - 1 | 4 | + | + | _ | Transect or wide area survey results | on the species involved |
| 070 | Change of limiting factors for key species, e.g. | | | | | | | | | | | | | | | | | Numbers, or presence/absence depends on the | |
| 2/9 | nest holes for parrots, fruit bat roosting trees | 8 | _ | Н | | 1 | | 1 | 1 ' | 1 1 | 1 | 1 | 1 | 1 | | 4 | 1 | 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. |
| Resp | onse indicators of agricultural biological diversity | | | | | | | | | | | | | | | | | | |
| | Ratio between observed and expected | | | | | | | | | | | | | | | | | | |
| | heterozygosity (H) for most valuable | | | | | | | | | | | | | | | | | | |
| | commercial tree species or one endangered tree | | | | | | | | | | | | | | | | | | |
| 88 | | 2 | | * | | | 1 | 1 | 1 ' | 1 1 | | 1 | | | | | | | |
| | Accessions of crops and livestock in <i>ex situ</i> | | | | | | | | | | | | | | | | | | |
| 89 | 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 | | | | | | | |
| | Amount of designated resource harvested per | | | | | | | | | | | | | | | | | | Community, sub-group of community o |
| 287 | unit effort | 8 | * | | | | 1 | 1 | 1 . | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | Amount of resource harvested per unit effort. | nominated individuals keep records. |
| | | | | | | | | | | | | | | | | | | • | Participatory techniques (RRA, PRA, etc.) and |
| | Proportion of income derived from uncultivated | | | | | | | | | | | | | | | | | | other socio-economic survey techniques |
| 291 | biodiversity resources | 8 | * | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | Surveyreturns | possibly every two or three years. |
| | | | | | | | | | | | | | | | | | | Land use plans, remote sensing data, surveys, | |
| 337 | Native vegetation fragmentation | 10 | | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | FAO data | GIS, overlay maps |
| | | | | | | | | | | | | | | | | | | Land use plans, remote sensing data, surveys, | |
| 341 | Size of agricultural land under irrigation | 10 | | | | | 1 | 1 | 1 ' | 1 1 | | 1 | | | | | | FAO data | GIS, overlay maps |
| | Number of endemic, | | | | | | | | | | | | | | | | | | |
| | threatened/endangered/vulnerable species by | | | | | | | | | | | | | | | | | | |
| 352 | taxonomic group | 9 | * | | | | 1 | 1 | 1 ' | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Number of threatened mammal, bird, fish, and | | | | | | | T | | | | | | | T | | | | |
| 354 | reptile species | 9 | * | | | | 1 | 1 | 1 ' | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Number of endangered mammal, bird, fish, and | | | | | | | | | | | | | | Т | T | | | |
| 355 | 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 | | |
| | Per capita wood consumption | 9 | * | | | | 1 | | | | | 1 | 1 | 1 | | | 1 | | |
| | Existence of procedures for identifying | 9 | * | | | | 1 | 1 | 1 | П | | 1 | 1 | 1 | 1 | 1 | 1 | | |

| | | | | _ | | | | _ | | | | | | | _ | | | _ | | Page 31 |
|--------|--|----------|----------|----------|---------------|-----|--------------|-----|------|------|------|---|----------|----------|------|------|------|----|---|--|
| | | | Leve | | | | | | | | | E | The | mat | ic a | rea | | | | |
| No. | Indicator/verifier | Soul | biol. | oro | Indica D P | tor | type | e l | Suii | tabi | litv | W | AG | DL | FΟ | IW N | 1C N | Λt | Data sets | Methodology |
| | endangered, rare, and threatened species | 100 | <u> </u> | 7 | ש ע פ | T | $\dot{\Box}$ | K | | T | T | | Н | | | | | | | wethodology |
| | Share of irrigated agricultural land | 0 | * | - | | ╁ | | 1 | 1 | - | - | + | 1 | | | | + | | | |
| | 0 0 | 9 | * | \dashv | | + | \vdash | 1 | + | - | + | | 1 | | | | - | - | | |
| | Arable land per capita | 9 | * | _ | | ╁ | \vdash | 1 | -1 | 1 | - | 1 | 1 | | | | - | | | |
| | Percentage of agricultural land under exploitation | 9 | _ | + | | + | \vdash | - | - | - | + | I | <u> </u> | | | | + | _ | | |
| | Replacement of land races with few imported | 0 | * | | | | | 1 | | | | | 1 | | | | | | | |
| 4340 | | 9 | * | - | | ╁ | | 1 | - | - | - | + | 1 | | | | + | | | |
| | Use of fertilizers | , 4 | | | | | | 1 | 4 | | _ | | | 4 | _ | 4 | | _ | | NULO |
| | Amount of animal waste, NH3 emissions | <u> </u> | | + | | +- | \vdash | _ | + | + | 4 | 1 | | | | I | - | 4 | | NH3 |
| | Loss of corridor elements in rural areas | 11 | * | + | | + | \vdash | _1 | 1 | 1 | 1 | 1 | 1 | 1 | | | + | _ | | |
| | Subventions to agricultural production | * | * | _ | | - | | 1 | 1 | 1 | 1 | 1 | 1 | | | | 4 | | | |
| - | Food donations | * | * | _ | | - | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | |
| | WTO agreements affecting crop choices | * | * | | | | | 1 | 1 | 1 | 1 | 1 | 1 | Ш | Ш | | | | | |
| Driver | r indicators of dry and sub-humid land biological | diversi | ity | | | | | | | | | | | | | | | | | |
| 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 | | | |
| ć | Share of natural-resource intensive industries in | | | | | | | | | | | | | | | | | | | |
| 137r | 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 | | | |
| | | | | | | | | | | | | | | | | | | 1 | National or local statistical data or survey returns. | Formal census data obtained from relevan |
| | Change of total human population inside and | | | | | | | | | | | | | | | | | [| Data from baseline and repeated socio-economic | agency. Surveys, possibly involving sampling |
| | around (e.g. within 20 km) conservation areas | 8 | * | | 1 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | surveys. | Monitor every 2-5 years. |
| | Demographic factors (age structure, settlement | | | | | | | | | | | | | | | | | | | Formal census data obtained from relevan |
| | patterns, education levels, etc.) of relevant | | | | | | | | | | | | | | | | | | | agency. Surveys, possibly involving sampling |
| 290h | human population in or around conservation area | 8 | * | | 1 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 15 | surveys. | Monitor every 2-5 years. |
| | | | | | | | | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| | Change of proportion of income derived from | 0 | | | | | | | | | | | | | | | | | | other socio-economic survey techniques |
| 2928 | alternative livelihood activities | 8 | _ | | 1 | - | | | 1 | - | - | | | 1 | 1 | - 1 | 1 | 1 | Survey returns | possibly every two or three years. |
| | Change of recourse corporation for heavy- | | | | | | | | 1 | | | | | | | | | | Cuniou raturno monogramant massada | Participatory techniques (RRA, PRA, etc.) and |
| | Change of resource consumption for household use vs. marketing | 0 | * | | 1 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | | - | other socio-economic survey techniques |
| | use vs. marketing Change of rate of consumption of biodiversity | ď | + | + | | | H | | + | + | + | | H | \vdash | Н | - 1 | + | - | surveys | possibly every two or three years. Participatory techniques (RRA, PRA, etc.) and |
| | change of rate of consumption of biodiversity resources by different groups (e.g. local | | | | | | | | | | | | | | | | | | Sunyou raturne managament records market | participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques |
| | resources by different groups (e.g. local communities vs. outside interests) | Q | * | | 1 | | | | | | | | | 1 | 1 | 1 | 1 | | survey retums, management records, market surveys | other socio-economic survey techniques possibly every two or three years. |
| | communica va. outaluc microataj | 8 | | + | | - | \vdash | | | + | + | | ₩ | H | H | - 1 | - | | | Participatory techniques (RRA, PRA, etc.) and |

| | | | _eve | Ιo | of | | | | | | | | matio | c ar | ea | | \neg | | |
|------|--|----------|----------|--------------|------------|------------|----------|-----|----------|------|---|-----|-------|-------|-----|--------|----------|--|---|
| N | In the Armhond Con | Soul | oiol. | org | Indica D P | tor ty | pe | Sui | tahi | litv | W | AG | DL F | -O /\ | V M | C N | Λt | Data sets | Mathadala |
| No. | Indicator/verifier harvesting biodiversity resources | rce | <u> </u> | <u> </u> | D P | <u>S I</u> | <u> </u> | | <u> </u> | T | | | | Т | | - | | | Methodology other socio-economic survey techniques, |
| | lial vesting biodiversity resources | | | | | | | | | | | | | | | | | surveys | possibly every two or three years. |
| | | | \dashv | \dagger | | | | Н | | | | | | \pm | Ŧ | $^{+}$ | ᅥ | | Participatory techniques (RRA, PRA, etc.) and |
| | Change of levels of exploitation toward or away | | | | | | | | | | | | | | | | , | Survey returns, management records, marke | other socio-economic survey techniques, |
| 296 | from sustainable use | 8 | * | | 1 | | | 1 | | | | | 1 | 1 | 1 | 1 | | surveys | possibly every two or three years. |
| Pres | sure indicators of dry and sub-humid land biologi | cal dive | ersity | | | | | | • | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | From national forest inventories, sampling ground |
| | | | | | | | | | | | | | | | | | | | surveys; cadastral surveys, remote sensing and |
| | Forest area change | 2 | * | _ | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 4 | 1 | | National authorities and FAO | a combination of these |
| | | | | | | | | | | | | | | | | | | Remote sensing coverage; agricultural census | |
| | Land use | 2 | | + | 1 | | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | _(| data on land uses | FAO recommendation |
| | Dust storms | 2 | * | + | 1 | | - | 1 | 1 | 1 1 | | 1 | 1 | | - | 4 | \dashv | | |
| - | Ground water level | 2 | * | + | 1 | | - | 1 | 1 | 1 | | 1 | 1 | 1 | - | 4 | _1 | | |
| | Karst activity | 2 | * | ╬ | 1 | | | 1 | 1 | | | 1 | 1 | 1 | 1 | + | _1 | | |
| 2 | Soil and sediment erosion | 2 | * | 4 | 1 | | | 1 | 1_ | - | | 1 | 1 | 1 | - | 4 | 1 | | |
| 2.5 | Change of presence, location, area, number of | 2 | | | 1 | | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | invasive plant or animal species | 2 | | + | 1 | | | 1 | 1 | 1 1 | H | 1 | 1 | 1 | 1 | 1 | _ | | |
| | Species diversity used for food | 2 | + | | 1 | | | 1 | 1 | + | | I | 1 | 1 | 1 | 1 | _ | | |
| | Species used by local residents | 2 | + | <u>`</u> | 1 | | + | 1 | 1 | 1 1 | | - 1 | 1 | 1 | 1 | 1 | \dashv | | |
| 134 | Population density | 4 | + | ╁ | I | | | Н | + | 1 | | ı | | 4 | + | + | \dashv | | COS CHA NOC NAMACO CO NEW OFC |
| | 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 |
| | Emissions of sulphur oxides | 4 | | | 1 | | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | | |
| 172 | Emissions of nitrogen oxides | 4 | | | 1 | | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | | |
| | | | | | | | | | | | | | | | | | | | Chlorofluorocarbons: CFs, CF2Cl2 (CFC-12), |
| | | | | | | | | | | | | | | | | | | | CFCI3 (CFC11), CF2CICF2CI (CFC-114), |
| | | | | | | | | | | | | | | | | | | | CF3CF2CI (CFC-115), C3FCI7 to C3F7C (CFC-211 to CFC-217), CF3CI (CFC-111), |
| | | | | | | | | | | | | | | | | | | | CFC-211 (0° CFC-217), CF3CI (CFC-111), CFCI2CFCI2 (CFC-112), CF2CICFCI2 (CFC- |
| | | | | | | | | | | | | | | | | | | | 113); Halons: CF2ClBr (halon-1211), CF3Br |
| | | | | | | | | | | | | | | | | | | | (halon-1301), CF3CFBr2 (halon-2402); |
| | | | | | | | | | | | | | | | | | | | Chlorinated carbons: CCI4), CH3CCI3; |
| | Consumption of ozone depleting substances | | | | | | | | | | | | | | | | | | HCHCs: CHF2CI (HCFC-22), CH2FCI |
| | (Chlorofluorocarbons, Halons, chlorinated | | | | | | | | | | | | | | | | | | (HCFC-31), CHFCl2 (HCFC-21); Methyl |
| 173 | carbons, HFCFCs)) | 4,11 | _ | \downarrow | 1 | | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 4 | 4 | | bromide: CH3Br |
| | Ambient concentrations of pollutants in urban | | | | | | | | | | | | | | | | | | |
| 174 | areas | 4,11 | | | 1 | | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | | | | CO2, SO2, Nox, PM10, VOC, Pb |

| | T | | | | | | | | | | | | | | | | | | | Page 33 |
|-------|---|---------|------------|-------|------|---------------|------------|----|------|-----|--------------|-----|---------|-----|------|--------|------|-----|--|---|
| | | | | vel | | | | | | | | | The | mat | ic a | rea | | | | |
| | L | Sou | lbic | ol. o | rg l | ndicat) P | or ty | pe | رزرز | ahi | 1:4 | , W | AG | וח | FΩ | /\// N | 1C I | Мŧ | Data sets | L |
| No. | Indicator/verifier | rce | E | S | GE |) P | <u>S I</u> | R | Suu | uvi | шу | | 710 | DL | 10 | 100 / | 10 1 | VIL | 244 3013 | Methodology |
| | L | | | | | | | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| | Proportion of income derived from uncultivated | | | | | | | | | | | | | | | | | | | other socio-economic survey techniques |
| 291 | biodiversity resources | { | 3 * | | Н | 1 | | | 1 | 1 | - | | 1 | 1 | 1 | 1 | 1 | 1 | Survey returns | possibly every two or three years. |
| 000 | | | | | | 4 | | | | | _ | | | 4 | 4 | 4 | 4 | 4 | | Remote sensing, aerial survey, map overlays |
| | Rate of encroachment into PAs | 5 | 5 ^ 2 * | | Н | - 1 | | | | 1 | 4 | | | _ | Ш | I | - I | - 1 | Remote sensing data, field reports, land use data. | GIS should be repeated every two to five years. |
| | Per capita wood consumption | Ç |) × | | Н | 1 | | | H | - | + | | 1 | 1 | 1 | | | 1 | | |
| | Amount of animal waste, NH3 emissions | * | * | | Щ | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | NH3 |
| | Dryland habitat change through irrigation | 11 | 1 * | | Ш | 1 | | | 1 | 1 | 1 | 1 | | 1 | | | | | | |
| 485 | Loss of corridor elements in rural areas | 11 | 1 * | | | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | |
| 486 | Surface disposal of mine deposits | 11 | 1 * | | | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | | |
| 487 | Trade records | * | | | * | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| 492 | 2 Ore extraction | 11 | 1 * | | | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | | |
| State | e indicators of dry and sub-humid land biological | diversi | ity | | | | | | | | | | | | | | | | | |
| 2 | Percentage of (near) natural vegetation cover | 2 | 2 * | | | | 1 | | 1 | 1 | | 1 | 1 | 1 | 1 | | | | | |
| 15 | Groundwater quality (nitrates, salinity, toxicants) | 2 | 2 * | | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | |
| 22 | Soil quality | 2 | 2 * | | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 1 | | |
| | Limiting factors for key species, e.g. nest holes | | | | | | | | | | | | | | | | | | | |
| 34 | Afor parrots, fruit bat roosting trees | 2 | 2 * | * | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| 37 | Relative wilderness index | 2 | 2 * | | | | 1 | | | | | | | 1 | 1 | | 1 | | | |
| | Percentage of area dominated by non | | | | | | | | | | | | | | | | | | | |
| 45 | domesticated species | 2 | 2 * | * | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | | |
| 48 | Percentage of area in strictly protected status | 2 | 2 * | * | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Absolute and relative abundance, density, basa | | | | | | | | | | | | | | | | | | | |
| | area, cover, importance value for various | i | | | | | | | | | | | | | | | | | | |
| 51 | species (plants) | 2 | 2 | * | Щ | | 1 | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Sex ratio, age distribution and other aspects of | | | | | | | | | | | | | | | | | | | |
| | population structure for sensitive species | | | | | | | | | | | | | | | | | | | |
| | keystone species, and other special interest | | | | | | | | | | | | | | | | | | | |
| 52 | 2species (animals) | | 2 | * | Н | | 1 | | 1 | 1 | + | | | 1 | 1 | 1 | 1 | 1 | | |
| | Presence of taxa indicators of environmenta | | | | | | 1 | | | 1 | | | _ ا | _ | 4 | | | | | |
| | Pintegrity | 2 | 4 | Î | H | | | | | 1 | + | | \perp | 븨 | 븨 | 1 | 1 | | | |
| | Degree of connectivity of food webs | 2 | 4 | | H | | | | 1 | 1 | \perp | | | | | 1 | 1 | | | |
| | Recorded species present (by group) | 2 | 2 | * | Н | | 1 | | 1 | 1 | 1 | 1 | 1 | _ 1 | _1 | 1 | 1 | | | |
| 62 | Indigenous species present (by group) | 2 | 2 | * | Н | | 1 | | Н | _ | \downarrow | | 1 | _1 | 1 | 1 | 1 | 1 | | |
| | Number of endemic species per taxonomic | | | | | | | | | | | | | | | | | | | |
| | 4group | 2 | 4 | * | Н | | 1 | | 1 | 1 | 1 | 1 | | _1 | 1 | 1 | 1 | 1 | | |
| 66 | Change of composition of species over time | 2 | 2 | * | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | | | |

| | | L | .evel | of | : | | | | | | | E TH | hem | atic | area | 1 | | | | |
|-----|---|---------------|---------------|----------|---------------|------------|-------------|----|------|------|----|------|--------------|-------|------|----|------|---|-----------|--|
| No. | Indicator/verifier | Soub rce I | iol. (E S | org G | Indica D P | tor i S | type I R | Si | ıita | bili | ty | N / | 4 <i>G E</i> | DL FO | O IW | MC | C Mt | t | Data sets | Methodology |
| 69 | Spatial differences in the number of rare vs common species | 2 | * | | | 1 | | | 1 1 | | | | 1 | 1 | 1 | 1 | 1 | | | |
| | Spatial differences in the number of restricted vs wide-range species | 2 | * | | | 1 | | | 1 1 | | | | 1 | 1 | 1 | 1 | 1 | | | |
| | Representativeness of intraspecific variability of endangered and economically important species | 2 | * | | | 1 | | | 1 1 | l 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | | |
| | Threatened tree species as a percentage of the 20 most used for commercial purposes | 2 | * | | | 1 | | | 1 1 | 1 1 | 1 | | Ì | 1 | 1 | | | | | |
| | 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 | | | | | ١ | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| 130 | Natural capital index framework | 3 | * | | | 1 | | | 1 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | | | 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 |
| | Percent of population in urban areas | 4 | | | | 1 | | | 1 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | ľ | | |
| 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 | 1 | | | |
| 225 | Absolute and relative abundance, density, basal area, cover, importance value for various species (plants) | | * | | | 1 | | | 1 1 | l 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals) | | * | | | 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 | 1 | | | |
| 229 | Fertility, fecundity, recruitment rate, survivorship, mortality rate, individual growth rate, and other individual and population health | 7 | * | | | 1 | | | 1 1 | l 1 | | | | 1 | 1 | 1 | 1 | | | |

| | | | ρV | el (| of | | | | | | | F | Th | ema | tic | area | <u> </u> | | | Page 33 |
|------|--|-----|----|----------|--------|-----|------|---|-----|------|---------------|---|----|------|------|------|----------|------|--|---|
| | | | | | | ato | rtyp | е | ~ | _ | | | , | | | | | | Date sets | |
| No. | Indicator/verifier | rce | E | S | g Indi | S | Ī | R | Sui | tabi | ilit <u>.</u> | y | A | G DI | . FC |) IW | MC | : Mt | Data sets | Methodology |
| | parameters | | | | | | | | | | | | | | | | | | | |
| | Trends in habitat components for special interest | | | | | | | | | | | | | | | | | | | |
| 230 | species (varies by species) | 7 | | * | | | 1 | | | | | | ш | | 1 | 1 1 | 1 | 1 | | |
| | Trends in threats to special interest species | | | | | | | | | | | | | | | | | | | |
| | (depends on life history and sensitivity of | | | | | | | | | | | | | | | | | | | |
| | species in relation to land use practices and | _ | | | | | | | | | | | | | | | | | | |
| 231 | other influences) | / | - | _ | | + | 1 | | | | - | | Н | - | | 1 | | 1 | | |
| | Identity, relative abundance, frequency, | | | | | | | | | | | | | | | | | | | |
| 222 | richness and evenness of species and guilds (in various habitats) | 7 | * | | | | 1 | | 1 | | | | | | 1 . | 1 . | 1 | 1 | | |
| 232 | Areal extent of each disturbance event (e.g. | / | - | \dashv | | + | 1 | | + | - | | | Н | - | + | 1 | + | + | | |
| 2/13 | Priedi extent of each disturbance event (e.g. Pries) | 7 | * | | | | 1 | | 1 | | | | | | 1 . | 1 | | | | |
| 210 | | , | | _ | | | 1 | | - | | | | | | Ť | + | t | T | Remote sensing data, vegetation maps, national | |
| | | | | | | | | | | | | | | | | | | | | Overlay maps, GIS, Aerial surveys, Ground |
| 335 | Self-regenerating habitat | 10 | | | | | 1 | | | | | | | | 1 | 1 - | 1 | 1 1 | wetland and freshwater inventories | truthing |
| | y y | | | | | | | | | | | | | | | | T | | Remote sensing data, vegetation maps, national | 3 |
| | | | | | | | | | | | | | | | | | | | forest cover inventories, coastal zone maps, | Overlay maps, GIS, Aerial surveys, Ground |
| 336 | Man-made habitat | 10 | | | | | 1 | | 1 | 1 | | | | | 1 | 1 1 | 1 | 1 1 | wetland and freshwater inventories | truthing |
| | | | | | | | | | | | | | | | | | | | Land use plans, remote sensing data, surveys, | |
| 337 | Native vegetation fragmentation | 10 | | | | | 1 | | 1 | 1 | | | ш | 1 | 1 | 1 1 | 1 | 1 1 | FAO data | GIS, overlay maps |
| | | | | | | | | | | | | | | | | | | | Land use plans, remote sensing data, surveys, | |
| 339 | Conversion of coastal areas | 10 | | _ | | _ | 1 | | 1 | 1 | | | Н | - | 1 ' | 1 1 | 1 | 1 1 | FAO data | GIS, overlay maps |
| 0.40 | | 10 | | | | | | | | | | | | | | | | | Land use plans, remote sensing data, surveys, | |
| 340 | Erosion | 10 | | _ | | + | 1 | | 1 | 1 | - | | Н | 1 | 1 ' | 1 | - | 1 | FAO data | GIS, overlay maps |
| 242 | Charles rightness | 10 | | | | | 1 | | | | | | | | 1 . | 1 . | | 1 1 | Natural biodiversity data base, surveys, | |
| 342 | Species richness | 10 | - | \dashv | | + | 1 | | - | - | - | | Н | + | ╫ | + | 1 | + | transects, sampling reports | Monitoring and research programmes, inventories |
| 2/12 | 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 |
| | Threatened species as percentage of total | | - | \dashv | | + | 1 | | - | + | + | | Н | ╁ | ╫ | ╫ | ! | + | wide area, transect, sample results | Surveys and monitoring programmes depending |
| | species or certain taxonomic groups | 10 | | | | | 1 | | 1 | 1 | 1 | | | | 1 . | 1 . | 1 | 1 1 | Endangered and threatened species data sets | on the species involved |
| 311 | species of certain taxonomic groups | 10 | | 1 | | | 1 | | - | 1 | Ť | | | | Ť | + | T | 1 | Endangered and infedience species data sets | Surveys and monitoring programmes depending |
| 345 | Percent endemic species threatened | 10 | | | | | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 - | 1 | 1 1 | Endangered and threatened species data sets | on the species involved |
| | | | 寸 | 7 | | | | | 7 | Ť | Ť | | | | T | | l | T | , | Surveys and monitoring programmes depending |
| 346 | Threatened species in protected areas | 10 | | | | | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 - | 1 | 1 1 | Endangered and threatened species data sets | on the species involved |
| | | | | T | | | | | | Ţ | | | | | | | | | | Morphological analysis, offspring parent |
| | | | | | | | | | | | | | | | | | | | | regression, DNA sequencing, electrophoresis, |
| 347 | Replacement of indigenous crops | 10 | | | | | 1 | | | | | | L | | 1 | 1 1 | 1 | 1 1 | Allelic diversity, karyotype variants | karyotypic analysis |
| 348 | Replacement of land races with few imported | 10 | | | | | 1 | | | | | | | | 1 | 1 1 | 1 | 1 1 | Allelic diversity, karyotype variants | Morphological analysis, offspring parent |

| | | L | _eve | el o | f | | | | | | | E | Th | ema | atic | area | l | | |
|------|---|-------------|------------|------------|--------------|----------|-------|---------|----|------|-------|-----|------------|------|------|------|----|----|--|
| No. | Indicator/verifier | Souk rce | oiol. E | org S G | India D F | ato S | r typ | oe R | Su | itab | oilit | y V | V A | G Di | L FC |) IW | МС | Mt | Data sets Methodology |
| | 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 | 1 |
| | Number of endemic, threatened/endangered/vulnerable species by taxonomic group | 9 | * | | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 |
| | Number of visitors to protected areas Number of threatened mammal, bird, fish, and | 9 | * | | | | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 1 | 1 | 1 | 1 |
| 354 | reptile species Number of endangered mammal, bird, fish, and | 9 | * | | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 |
| 355 | reptile species Percentage of protected area of different | 9 | * | | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 |
| 358 | ecosystem types Species of communal interest of all indigenous | 9 | * | | | _ | 1 | | 1 | 1 | 1 | 1 | | - | 1 | 1 1 | 1 | 1 | 1 |
| 359 | species (percent) Endangered species of all indigenous species (percent) | 9 | * | | | | 1 | | | | | | | | 1 | 1 1 | 1 | 1 | |
| | Alien species of all indigenous species (percent) | 9 | * | | | | 1 | | 1 | | | | | 1 | 1 | 1 1 | 1 | 1 | 1 |
| Impa | ct indicators of dry and sub-humid land biologica | l divers | ity | | | | | | | | | | | | | | | | |
| | Crown cover (%) | 2 | * | | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 | | 1 | Standard canopy cover methods, possibly done Canopy cover in percent at the upper canopy seasonally, or at least annually in the same season |
| | Surface displacement | 2 | * | _ | | 4 | | 1 | 1 | 1 | _ | | | 1 | 1 | 1 | | 1 | 1 |
| | Total area of a particular habitat/vegetation type Size of largest block of each habitat/vegetation type | 2 | * | | | | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 |
| | Mean nearest distance between blocks of a particular habitat type | 2 | * | | | | | 1 | 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 | 1 |
| | Livestock levels per sq. km | 2 | * | _ | | | | 1 | 1 | 1 | | 1 | | 1 | 1 | 1 | | 1 | 1 |
| | Number of introduced species and genomes Quantity of specimens or species of economic/scientific interest removed from the environment | | | * | | | | 1 | 1 | 1 | | 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 |
| | Proportion of protected area to converted/utilized | 2 | * | \top | | | | 1 | 1 | 1 | 1 | T | | Ť | 1 | 1 1 | 1 | | 1 |

| | | | Lev | vel | of | | | | | | | | Ε | Ther | nati | c aı | rea | | | | Page 37 |
|----------|--|-----|----------|-------|----|----------------|----|------------|---|------|------|-----|---|------|------|------|-------|------|------|--|---|
| | | Sou | bio | ol. o | rg | Indicat | or | type | | •. | | | W | 4.0 | DI. | FO 1 | | 10.1 | . 44 | Data coto | |
| No. | Indicator/verifier | rce | E | S | Ğ | Indicat D P | S | <u>í</u> F | S | uita | ıbil | ity | | AG | DL I | FU I | IVV I | /ICT | VIt | Data sets | Methodology |
| | area | | | | | | | | | | | | | | | | | | | | |
| 44 | Erosion/loss of genetic diversity patrimony | 2 | * | * | * | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Rate of change from dominance of non | | | | | | | | | | | | | | | | | | | | |
| 46 | domesticated to domesticated species | 2 | * | * | Ш | | | 1 | | 1 | 1 | | | 1 | 1 | | 1 | | | | |
| | Population growth and fluctuation trends of | f | | | | | | | | | | | | | | | | | | | |
| 49 | special interest species | 2 | * | * | | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Ratio between exotic species plantation area | 1 | | | | | | | | | | | | | | | | | | | |
| 55 | and native species in plantation area | 2 | | | H | | | 1 | + | 1 | 1 | 1 1 | | | 1 | 1 | _ | _ | 1 | | |
| ,, | Number of non-indigenous species present (by | · | | * | | | | 1 | | 1 | 1. | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| 0.3 | taxonomic group) | | | | H | | | - | | + | + | | H | | - 1 | - | - 1 | 4 | - 1 | | |
| 65 | Change of number of species (species richness) over time (increase/decrease) | 2 |) | * | | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | | | |
| 0. | Species groups: total number vs. threatened | | | | H | | | - | | - | + | + | | - 1 | - 1 | - | | _ | | | |
| 67 | 7species | 1 2 | | * | | | | 1 | | 1 | 1 . | 1 1 | ı | | 1 | 1 | 1 | 1 | | | |
| <u> </u> | Species with smaller population size vs larger | | | | Ħ | | | Ť | | 1 | 1 | 1 | | | | i | | Ť | | | |
| 68 | Spopulation size | 2 | | * | | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | | |
| | Percentage change of number of native species | | | | | | | | | | | | | | | | | | | | |
| 73 | Bof grasses and herbs | 2 |) | * | | | | 1 | | 1 | 1 . | 1 1 | | 1 | 1 | 1 | | | | | |
| | Number of species in taxonomic group | | | | | | | | | | | | | | | | | | | | |
| 77 | threatened with extirpation | 2 | | * | * | | | 1 | | 1 | 1 ' | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | 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 | | | |
| 00 | Species with stable or increasing populations | _ | | | * | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | | | |
| 98 | (number or percent) | | \vdash | | H | | | | + | - | - | - | | I | - I | II. | ı | _ | | | |
| 01 | Species with decreasing populations (number or percent) | 7 | | * | * | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | | | |
| | Number of endemic species in protected areas | 2 | | * | * | | | 1 | | 1 | 1 . | 1 1 | | - 1 | 1 | 1 | 1 | 1 | | | |
| 0.3 | Number of endernic species in protected areas | | | | H | | | | | 1 | + | | H | | - 1 | - 1 | - 1 | + | | Remote sensing data (vegetation maps may l | Manual mothods using avarlay mans or CI |
| 268 | Change of total area of a particular habitat type | 8 | * | | | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | | where feasible |
| 200 | Change of area of largest block of a particular | | | | Ħ | | | - | | + | 1 | | | | - | - | | Ť | | Remote sensing data (vegetation maps may | |
| 269 | Phabitat type | 8 | * | | | | | 1 | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | | | where feasible |
| | Change of average size of a particular habitat | | | T | П | | | T | | | T | | | | | 1 | | | | Remote sensing data (vegetation maps may | |
| 270 | type . | 8 | * | | | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | | where feasible |
| | Change of mean nearest distance betweer | | | | | | | | | | | | | | | | | | | | Manual methods using overlay maps, or GI: |
| 271 | blocks of a particular habitat type | 8 | * | | Ш | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 9 | where feasible |
| | Change of average width of break in ar |) | | | | | | | | | | | | | | | | | | | Manual methods using overlay maps, or GI |
| 272 | dentified habitat corridor | 8 | * | | | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | Remote sensing data or measured in the field | where feasible |

| | | | .evel | | | | | | | | | | natio | c are | ea | | | | |
|------|---|-----------|----------|-----|----------|----------|---|-----|------|------|---|----|-------|----------|--------|----------|-----|--|--|
| | | Soub | iol. | org | Indicato | r typ | е | Sui | tahi | litv | W | AG | DL F | -0 IV | V M | СМ | 1† | Data sets | L |
| | Indicator/verifier | rce | <u> </u> | G | D P S | <u> </u> | R | Jun | T | ııy | | | | <u> </u> | · ···· | <u> </u> | ` | | Methodology |
| | 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 |
| | Change of total area of land uses compatible | | | | | | | | | | | | | | | | | | Remote sensing data or field reports. Land use |
| | with biodiversity conservation in the monitoring | | | | | | | | | | | | | | | | | | maps are likely to be available from othe |
| 274 | area | 8 | * | | | 1 | | | | | Ц | 1 | 1 | 1 | 1 | 1 | 1 | Area of identified compatible land uses | agencies |
| 275 | Change of crown cover percent | 8 | * | | | 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 |
| | | | | t | | | | | | | | | | | T | T | | | Long-term (possibly every two to five years) |
| 276 | Change of location of habitat boundaries | 8 | * | | | 1 | | | 1 | 1 | | | 1 | 1 | 1 | | | ransects | survey of sites, and/or fixed point photography |
| | Change of number of keystone or indicator | | | | | | | | | | | | | | | | | | Survey of transects or sites, frequency depends |
| | species | 8 | * | | | 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 | 1 | | | 1 | Fransect or wide area survey results | on the species involved |
| | Change of limiting factors for key species, e.g. | | | | | | | | | | | | | | | | I | Numbers, or presence/absence depends on the | |
| | nest holes for parrots, fruit bat roosting trees | 8 | * | | | 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 | 1 | | | 1 f | actors involved | Transects, quadrats, general observations |
| | Changes in frequency of events such as | | | | | | | | | | | | | | | | | | Incorporate into patrol reporting. Carry out specific |
| 281 | landslips | 8 | * | | | 1 | | 1 | 1 | 1 1 | | 1 | 1 | 1 | _ | _ | _ | 1 2 | surveys for identified events. |
| | Abundance (number per taxonomic group) of key animal species | 8 | * | | | 1 | | 1 | 1 | 1 1 | | | 1 | 1 | 1 | 1 | t | | Management staff monitor transects (e.g. sections of track) on regular patrols. Regular counts a concetnration points. |
| 285 | Range of designated species (either total range or range within monitoring area) Amount of plant or animal material by species harvested in protected area | 8 | * | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 10 | Combination of sighting data and transect sign data. Amount of resource harvested in a defined area as recorded by the local community. | National level staff combine indicator data for al relevant areas. 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 | | Amount of resource harvested per unit effort. | Community, sub-group of community o nominated individuals keep records. |
| | 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 | | | Information collected by management patrols from villagers or from market traders. |
| Resp | onse indicators of dry and sub-humid land biolog | gical div | ersity | | | | | | | | | | | | | | | | |
| | 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 | | |
| | Number of threatened species in taxonomic groups in <i>ex situ</i> collections | 2 | * | * | | | 1 | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | | | |
| | Number of threatened species in taxonomic | 2 | * | * | | | 1 | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |

| Г | 1 | | | _ | 4 | | _ | | _ | | | 1= | . | | | | | Page 3 |
|-----|---|--------|----------|----------|------|------------|-----------|---------|-----|----------------|----------|-----|----------|------|-------|----|------|---|
| | | _ | | /el | | | | | | | | | Ther | | | | | |
| No | Indicator/verifier | Sou | lbio | l. or | g In | dicat P | orty s | pe D | Sui | itab | ilit | , W | AG | DL . | FO II | NN | 1C N | Methodology |
| NO. | group with viable ex situ populations | 100 | 1 | <u>`</u> | שט | <u> </u> | <u> </u> | Т | Н | | 寸 | | | | Т | I | Т | Wethodology |
| | Environmental protection expenditures as a | 2 | Н | | | | | + | Н | - | - | + | Н | | | - | + | |
| 139 | Repercent of GDP | 4 | 1 | | | | | | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | |
| 130 | Decentralized local-level natural resource | | | | | | | | H | Ť | - | ╈ | Н | - | + | + | ╁ | |
| 153 | Rmanagement | | 1 | | | | | | 1 | | | | 1 | 1 | 1 | 1 | 1 | |
| | Protected area as a percent of total area | 4 | 1 | | | | | | 1 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | |
| | Expenditure on air pollution abatement | 4 | 1 | | | | | | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Sustainable development strategies | 4 | 1 | | | | | | 1 | | | | 1 | 1 | | | | |
| | Mandated environmental impact assessment | 4 | 1 | | | | | | 1 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | |
| | Scientists and engineers engaged in research | 1 | | | | | | | П | | | | | | | | | |
| 183 | Band development per million population | 4 | 1 | | | | | | 1 1 | | | | 1 | 1 | 1 | 1 | 1 | |
| 184 | Implementation of ratified global agreements | 4 | 1 | | | | | | 1 | | | | 1 | 1 | 1 | 1 | 1 | |
| 185 | Programmes for national environmental statistics | 5 4 | 1 | | | | | | 1 | | | | 1 | 1 | 1 | 1 | 1 | |
| | Average amount of time (person-days of | f | | | | | | | | | | | | | | | | |
| 32 | protected area staff) spent in the field | 8 | 3 * | | | | | | 1 1 | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 Time sheets and fiel reports Calcualte field time |
| | Budget allocated to monitoring, σ number of staff | f | | | | | | | | | | | Ш | | | | | Results of review of budget, staffing, management Review budget, staffing and managem |
| 325 | trained in monitoring | { | 3 * | | | | | | 1 1 | 1 | 1 | | ш | 1 | 1 | 1 | 1 | 1 systems systems annually or less frequently. |
| 326 | Status of monitoring information managemen system | t { | 3 * | | | | | | 1 | | | | | 1 | 1 | 1 | 1 | 1Management systems Review of existing systems |
| 327 | Integration of biodiversity monitoring into the Proutine duties of field staff | 9 | 3 * | | | | | | 1 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | Review annual work programms and patrol reports Review annual work programms and patrol reports. |
| | Extent and timeliness of implementation of | f | | | | | | | П | | | Ť | | | | 1 | | Calculate wether management bodies are meet |
| 328 | scheduled/planned activities | 8 | 3 * | | | | | | 1 1 | 1 | | | Ш | 1 | 1 | 1 | 1 | 1Management records agreed targets. |
| | | | | | | | | | | | | | | | | | | Recorded evidence of unlawful activity, field |
| | | | | | | | | | ш | | | | ш | | | | | reports and aerial surveys, results of threat Calculate form official reports. Carry out thre |
| 329 | Number and nature of threats to site | 8 | 3 * | | | | | | 1 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 review, new development plans. review. |
| | Existence of an agreed procedure for conflict | | | | | | | | ш | | | | Ш | | | | | |
| 22 | resolution on natural resource managemen | t , | * | | | | | | 1 1 | | | | Ш | 1 | 1 | 1 | 1 | Project or government records, documentation of |
| 33 | issues Change of proportion of conflicts which are | | 3 | | | | | | Н | | - | | Н | _ I | + | 4 | + | 1 traditional resource management regime Review records and documents, interviews. |
| 337 | Change of proportion of conflicts which are Successfully resolved | , | 2 * | | | | | | 1 | | | | Ш | 1 | 1 | 1 | 1 | Project and government agency records, 1 interview results, PRA results. Review records, carry out interviews and PRA |
| 332 | Successfully resolved | | | | | | | + | Н | | _ | | | | ╅ | ┪ | ╅ | Project and government agency records, |
| 333 | Reduced conflicts over access or use rights | 8 | 3 * | | | | | | 1 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 Interview results, PRA results. Review records, carry out interviews and PRA |
| | Degree of tolerance of wildlife on community | | | | | | | | П | 1 | T | | | | T | 1 | T | |
| 334 | land | 8 | 3 * | * | | | | | 1 1 | | | | | 1 | 1 | 1 | 1 | 1 Community and management records. Review records, carry out interviews and PRA |
| | Existence of institutional capacity, policy and | | | | | | | | | | | | | | | | | |
| | regulatory framework for the planning | | | | | | | | | | | | | | | | | |
| 349 | management and conservation of biologica | (| <i>*</i> | | | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | |

| | | | Lev | el | of | | | | | | | Ε | The | mat | ic a | rea | | | | |
|-----|--|-----|------|------|-------------------|------|--|----------------|----|----------|--------------------|---|-------|----------|----------|-------|-------|------------|---|--|
| | | Sou | biol | . or | g Indica | ator | type | l _c | | ahi | 1; ₄ ., | W | A_G | וח | FΩ | IW I | MC . | ΛΛt | Data sets | |
| | Indicator/verifier | rce | E | S | g indica G D P | S | <u> </u> | RP | ши | uvi | шу | | 710 | DL | 10 | 100 1 | VIC I | ivit | Data solo | Methodology |
| | diversity | | | | | | | - | 4 | 4 | | | | | | | | | | |
| | 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 | | |
| | Endangered species with plans of action (all | | | | | | | | | | | | | | | | | | | |
| | categories of endangerment, and all types of | f | | | | | | | | | | | | | | | | | | |
| 362 | plans of action) | 9 | * | | | | | 1 | 1 | _ | | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Existence of procedures for identifying | 1 | | | | | | | | | | | | | | | | | | |
| | endangered, rare, and threatened species | 9 | Ш | * | | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | er indicators of forest biological diversity | | | | | | | | | <u> </u> | | _ | 1 | ī | ı | T 1 | | | | |
| | 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 | | | |
| | Share of natural-resource intensive industries in | | | | | | | | | | | | | | | | | | | |
| 137 | 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 | | | |
| | | | | | | | | | | | | | | | | | | | National or local statistical data or survey returns. | Formal census data obtained from relevant |
| | Change of total human population inside and | | | | | | | | | | | | | | | | | | Data from baseline and repeated socio-economic | |
| | around (e.g. within 20 km) conservation areas | 8 | * | | 1 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | Monitor every 2-5 years. |
| | Demographic factors (age structure, settlement | | | | | | | | | | | | | | | | | | National or local statistical data or survey returns. | |
| | patterns, education levels, etc.) of relevant | | | | | | | | | | | | | | | | | | Data from baseline and repeated socio-economic | |
| 290 | human population in or around conservation area | 8 | * | | 1 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | , | Monitor every 2-5 years. |
| | | | | | | | | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| 000 | Change of proportion of income derived from | | | | | | | | | | | | | ١. | _ | | _ | _ | | other socio-economic survey techniques, |
| 292 | alternative livelihood activities | 8 | _ | | 1 | - | | | 4 | + | + | | | | | | _ | | | possibly every two or three years. |
| | Change of wassings as a supering for have a half | | | | | | | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| | Change of resource consumption for household Buse vs. marketing | 0 | * | | 1 | | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | Survey returns, management records, market | orner socio-economic survey techniques, possibly every two or three years. |
| 293 | Change of rate of consumption of biodiversity | Ŏ | H | + | - | | | | + | ╫ | ╁ | | | | H | | _ | _ ' | | |
| | resources by different groups (e.g. local | | | | | | | | | | | | | | | | | | Survey returns, management records, market | Participatory techniques (RRA, PRA, etc.) and |
| 201 | resources by different groups (e.g. local Acommunities vs. outside interests) | 8 | * | | 1 | | | | | | | | | 1 | 1 | 1 | 1 | 1 | | possibly every two or three years. |
| 274 | reominanties vs. outside interests) | O | | + | | | | | 1 | + | + | | | <u> </u> | | H | H | ! ' | | Participatory techniques (RRA, PRA, etc.) and |
| | Change of number or percent of people | | | | | | | | | | | | | | | | | | Survey returns, management records, market | |
| 295 | harvesting biodiversity resources | 8 | * | | 1 | | | | 1 | | | | | 1 | 1 | 1 | 1 | 1 | | possibly every two or three years. |
| 270 | Change of levels of exploitation toward or away | | | 7 | | | | | Ť | T | T | | | Ė | <u> </u> | | | <u> </u> | Surveys returns, management records, market | |
| 296 | from sustainable use | 8 | * | | 1 | | | | 1 | | | | | 1 | 1 | 1 | 1 | 1 | | other socio-economic survey techniques, |

| | | | | | | | | | | | | | | | | | | | Page 41 |
|----------------|---|-----|-------|----------|---------------|---------------|----------|----------------|-----|------|-----|----------|------|------|------|-------|----------|--|---|
| | | | Leve | | | | | | | | | The | mat | ic a | rea | | | | |
| _N , | hadia dankanisi a | Sou | biol. | org | Indica D P | ator t | ype | Sui | tak | ilit | , W | AC | G DL | FΩ | IW N | 1C. I | Mt | Data sets | Markle and a large |
| No. | Indicator/verifier | rce | E S | <u> </u> | D P | S | <u>I</u> | Sul | ıuv | | | L''C | | , , | // | ., | | | Methodology |
| | | | | | | $\perp \perp$ | | \blacksquare | | | | | | | | | | | possibly every two or three years. |
| | | | | | | | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| 0.0- | Change of number or percent of people engaging | | * | | | | | | | | | | | | | | | , | other socio-economic survey techniques |
| 29 | 7 in alternative livelihood activities | 8 | ^ | - | 1 | ++ | | 1 | | 4 | | | | 1 | 1 | 1 | Ts | urveys | possibly every two or three years. |
| | Change of number and/or nature (full time, | | | | | | | | | | | | | | | | | | |
| 200 | seasonal, etc.) of community members | | * | | 1 | | | | 1 | | | | | 1 | 1 | 1 | 10 | Note that are not a most of an area of a second | Examine reports and ecords every one or two |
| 298 | Bemployed in project and related activities | 8 | _ | + | 1 | ++ | _ | - ' | + | + | | H | | _ | _ | - 1 | III- | Project reports, project employment records. | years. |
| 22. | Change of level of understanding of biodiversity | 0 | * | | 1 | | | | | | | | | 1 | 1 | 1 | 1 [| Deculto of atrustured intensional/guactionnairea | Ctrustured intensions and/or questionnaires |
| 322 | concepts and conservation objectives Existing strategies for <i>in situl ex situ</i> | ŏ | | + | | + | - | | _ | + | + | H | | - | _ | - 1 | III. | Results of structured interviews/questionnaires | Structured interviews and/or questionnaires |
| | conservation of genetic variation within | | | | | | | | | | | | | | | | | | |
| | commercial, endangered, rare and threatened | | | | | | | | | | | | | | | | | | |
| 303 | Species of forest flora and fauna | 9 | , | * | 1 | | | | | | | | | 1 | | | | | |
| | sure indicators of forest biological diversity | , | | | ' | | | | | _ | | | | نا | | _ | | | |
| 1103 | sure indicators of forest biological diversity | | Т | Т | | П | | П | Т | Т | Т | П | П | | Т | П | П | | Remote sensing, aerial survey, map overlays |
| 330 | Rate of encroachment into PAs | 8 | * | | | 1 | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 16 | Remote sensing data, field reports, land use data. | GIS should be repeated every two to five years. |
| | Per capita wood consumption | Q | * | 1 | | 1 | | | 1 | Ť | | - | 1 1 | 1 | Ť | 寸 | 1 | terriore series by data, note reporte, tarte des data. | ene enealla be repeated every the te had years. |
| 300 | Annual volume and area of timber harvested | | | | | 1 | | | | | | | Ϊ΄ | ' | | | ľ | | |
| 376 | Sindigenous and plantation | 9 | * | | | 1 | | 1 | | | 1 | | | 1 | | | | | |
| 070 | Contribution of forest sector to gross domestic | , | | T | | | | | | | Ť | | | | | | | | |
| 377 | product | 9 | * | | | 1 | | | | | | | | 1 | | | | | |
| | Managed forest ratio | 9 | * | | | 1 | | | | | | | | 1 | | | | | |
| | Forest protection rate | 9 | | * | | 1 | | | | T | | | | 1 | | | | | |
| | Burnt forest area per year | 9 | * | | | 1 | | 1 | 1 | 1 | 1 | | | 1 | | | | | |
| | Rate of vegetation clearing by activity | | | 1 | | Ħ | | | 1 | Ť | Ť | Н | | Ħ | | | | | |
| | (agriculture, urban development, logging, mining, | | | | | | | | | | | | | | | | | | |
| 410 | Charvesting for subsistence) | 9 | | * | | 1 | | 1 | 1 | 1 | 1 | | | 1 | | | | | |
| | Amount of animal waste, NH3 emissions | * | * | | | 1 | | 1 | 1 | 1 | 1 | - | 1 1 | 1 | 1 | | 1 | | NH3 |
| | Surface disposal of mine deposits | 11 | * | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | | |
| | 7 Trade records | * | | * | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | 2 Ore extraction | 11 | * | | | 1 | | 1 | 1 | 1 | 1 | Г | 1 | 1 | 1 | 1 | Ť | | |
| | e indicators of forest biological diversity | | | | | 1 | | | | -1 | | | | ئب | | -1 | | | |
| | Percentage of (near) natural vegetation cover | 2 | * | T | | 1 | | 1 | 1 | T | 1 | Γ. | 1 1 | 1 | Ī | П | | | |
| | Groundwater quality (nitrates, salinity, toxicants) | 2 | * | + | | 1 | | 1 | 1 | 1 | 1 | _ | 1 1 | 1 | 1 | | \vdash | | |
| | Soil quality | 2 | * | + | | 1 | | 1 | 1 | 1 | 1 | - | 1 1 | 1 | -1 | | 1 | | |
| | Stream sediment storage and load | 2 | * | + | | 1 | + | 1 | 1 | 1 | 1 | | + | 1 | 1 | + | + | | |
| | | 2 | * : | + | | | + | | 1 | 1 | 1 | \vdash | | 1 | 1 | | 1 | | |
| 34 | Limiting factors for key species, e.g. nest holes | 2 | | | | | | 1 | I | I | | |] | | ı | - 1 | I | | |

| | | | Leve | | | | | | | | | | | The | ema | tic | area | 1 | | | |
|-----|---|------------|------------|----|----------------|---------------|----------|----------|--------|-----|-----|------|-----|----------|------|------|----------------|----|--------|--|-----------------|
| No. | Indicator/verifier | Sou rce | biol. E | or | g I G [| Indica D P | tor S | typ I | e R | Sui | tab | ilit | y M | / | G DI | L FC |) IW | МС | Mt | Data sets Methodology | |
| | for parrots, fruit bat roosting trees | | | | | | | | | | | | | | | | | | | | |
| 37 | Relative wilderness index | 2 | * | | | | 1 | | | | | ı | | | | 1 | 1 | | 1 | | |
| 45 | Percentage of area dominated by non- domesticated species | 2 | * | * | | | 1 | | | 1 | 1 | 1 | 1 | | | 1 | 1 | | | | |
| | 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) | | | * | | | 1 | | | 1 | 1 | | | | | 1 . | 1 1 | | 1 | 1 | |
| | Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest species (animals) Presence of taxa indicators of environmental | 2 | | * | | | 1 | | | 1 | 1 | 4 | | | | 1 | 1 1 | | 1 | 1 | |
| | integrity | 2 | | * | + | | 1 | | | 1 | 1 | - | - | | + | 1 . | 1 1 | | 1 | | |
| | Degree of connectivity of food webs Recorded species present (by group) | 2 | _ | * | + | | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 . | 1 1 | | 1 | | |
| | Indigenous species present (by group) | 2 | + | * | + | | 1 | | | - | + | + | 1 | | 1 | 1 . | 1 1 | | 1 . | 1 | |
| 02 | Number of endemic species per taxonomic | | | - | + | | | | | | - | - | | | 1 | + | ' ' | | + | 1 | |
| 64 | group | 2 | | * | | | 1 | | | 1 | 1 | 1 | 1 | | | 1 . | 1 1 | | 1 . | 1 | |
| | Change of composition of species over time | 2 | | * | Ť | | 1 | | | Ť | İ | Ť | Ť | | 1 | 1 | 1 1 | | 1 | | |
| | 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 | | | | |
| | Diversity of native fauna Species richness (number, number per unit area, number per habitat type) | 2 | | * | * | | 1 | | | | | | | | 1 | 1 1 | 1 1 1 1 | | 1 1 | 1 | |
| | Natural capital index framework | 3 | * | | | | _1 | | | 1 | 1 | 1 | 1 | | | 1 | 1 1 | | 1 | For example four quality variables in percent of baseline, (70%+20%+0%+30%)/4=30% mu. Sum (percent agro-ecosystem quantity * percent percent ecosystem type of total national types agro-ecosystem quality) | e Itiplied w |
| 136 | Percent of population in urban areas | 4 | | T | | | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 1 | | 1 | | |

| | _ | | | | | | | | | | | | | | | | | | 1 | Page 43 |
|-----|---|-----|-------|-----|--------|-----|--|------|------|------|----------|---|------|-------|------|----------|-------|----------|-------------|---------|
| | | | Leve | | | | | | | | | | Ther | nati | ic a | rea | | | | |
| | | Sou | biol. | org | Indica | tor | type | C- | .:4. | .L:1 | :4. | W | AG | וח וח | FΩ | /\// A | 1C I | \1t | Data sets | |
| | Indicator/verifier | rce | E 5 | (| G D P | S | <u> </u> | Ş Di | ıua | vii | иу | | AU | UL I | | 1 V V /\ | iiC I | vil | 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 | | | | | |
| | Threatened species as a percent of total native | | | | | | | | | | | | | | | | | | | |
| | 3 species | 4 | | | | 1 | | | 1 | 1 1 | ı | | 1 | 1 | 1 | 1 | 1 | | | |
| 218 | Allelic diversity | 7 | | * | : | 1 | | | 1 | | | | | | 1 | | | | | |
| 219 | Presence/absence of rare alleles | 7 | | * | | 1 | | | 1 | 1 1 | l | | | | 1 | | | | | |
| 220 | Heterozygosity | 7 | | * | | 1 | | | 1 | 1 1 | l | | | | 1 | | | | | |
| 221 | Phenotypic polymorphism | 7 | | * | | 1 | | | 1 | | | | | | 1 | | | | | |
| | 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 | | _ | | | |
| | Rate of genetic interchange between populations | | | | | | | | | | | | | | | | | | | |
| 22/ | (measured by rate of dispersal and subsequen | 1 , | | * | | 1 | | | | | | | | | 1 | | | | | |
| 224 | reproduction of migrants) | / | | + | | | - | | + | 1 | | | - | - | - | | _ | | | |
| | Absolute and relative abundance, density, basal area, cover, importance value for various | | | | | | | | | | | | | | | | | | | |
| 225 | species (plants) | 7 | | * | | 1 | | | 1 | 1 - | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Sex ratio, age distribution and other aspects of | f | | t | | | + | | + | 1 | + | | ┪ | 7 | - | - 1 | ┪ | _ | | |
| | population structure for sensitive species | | | | | | | | | | | | | | | | | | | |
| | keystone species, and other special interest | | | | | | | | | | | | | | | | | | | |
| 226 | species (animals) | 7 | | * | | 1 | | | | | | | | 1 | 1 | 1 | 1 | | | |
| | Distribution and dispersion of special interets | S | | | | | | | | | | | | | | | | | | |
| 227 | species across the region | 7 | , | * | | 1 | | | 1 | | | | | 1 | 1 | 1 | 1 | | | |
| | Population growth and fluctuation trends of | f | | | | | | | | | | | | | | | | | | |
| 228 | Sspecial interest species | 7 | , | t | | 1 | | | 1 | 1 1 | I | | | 1 | 1 | 1 | 1 | | | |
| | Fertility, fecundity, recruitment rate | | | | | | | | | | | | | | | | | | | |
| | survivorship, mortality rate, individual growth | | | | | | | | | | | | | | | | | | | |
| 200 | rate, and other individual and population health | _ | | | | 1 | | | 1 | 1 | | | | 4 | 4 | 4 | 4 | | | |
| 229 | parameters | / | + | + | | | + | | 1 | 1 | \vdash | | - | - | - 1 | - 1 | _ | \dashv | | |
| າາຕ | Trends in habitat components for special interest species (varies by species) | 7 | | | | 1 | | | | | | | | 1 | 1 | 1 | 1 | | | |
| 230 | Trends in threats to special interest species | . / | + | + | | | | | + | ╫ | | | | - | - | - 1 | - | _ | | |
| 221 | depends on life history and sensitivity of | | | ŧ | | 1 | | | | | | | | 1 | 1 | 1 | 1 | | | |
| ۷.) | ngacponas on inc mistory and schisitivity of | - 1 | L | | | | | | | | \perp | | | - 1 | 1 | - 1 | - 1 | | <u> </u> | |

| | | | _evel | | | | | | | | | The | mat | ic ar | ea | | | |
|-----|--|------|----------|-----|---------------|------------|----------|----|-------|-------|-----|-----|-----|-------|-----|------|----|-----------------------|
| No. | Indicator/verifier | Sout | oiol. (| org | Indica D P | tor ty | /pe | Su | itabi | ility | , W | AG | DL. | FO I | W N | 1C N | Иt | Data sets Methodology |
| | species in relation to land use practices and | | <u> </u> | T | υP | 3 <u>1</u> | <u>K</u> | H | | Ť | t | | | | 1 | | | Methodology |
| | other influences) | | | | | | | | | | | | | | | | | |
| | ldentity, relative abundance, frequency, richness and evenness of species and guilds (in | | | | | | | | | | | | | | | | | |
| | various habitats) | 7 | * | | | 1 | | 1 | | | | | 1 | 1 | 1 | 1 | | |
| | Diversity of tree ages or sizes in community (or stand) | 7 | * | | | 1 | | 1 | | | | | | 1 | | | | |
| | Ratio of exotic species to native species in community (species richness, cover and biomass) | | * | | | 1 | | 1 | | | | | | 1 | | | | |
| 235 | Proportions of endemic, threatened, and endangered species | 7 | * | | | 1 | | 1 | | | | | | 1 | | | | |
| | Frequency distribution of seral stages (age classes) for each forest type and across all types | | * | | | 1 | | 1 | 1 | 1 | | | | 1 | | | | |
| | Average and range of tree ages within defined seral stages | 7 | * | | | 1 | | 1 | | | | | | 1 | | | | |
| | 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 Spatial dispersion of structural elements and patches | 7 | * | | | 1 | | 1 | | | | | | 1 | | | | |
| | 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 | , | 7 | * | | | 1 | | 1 | | 1 | | | | 1 | | | | |
| | Intensity and severity of disturbance events (including fires) | 7 | * | | | 1 | | 1 | 1 | 1 | 1 | | | 1 | | | | |

| | T | | | | | | | _ | | | _ | | | | | | | Ī | Page 43 |
|------|--|-----|----------|---------|---------------|----------|----------|----|------|---------------|-----------------|-----|----------|----------|------|------|---------|-----------|-------------|
| | | | Level | | | | | | | | | ΕĮT | hem | atic | are | a | | | |
| l | | Sou | biol. | org | Indica D P | tor | type | C. | iita | h;1 | ٠, ١ | N | AG E |) I F | O IM | MC | : Mt | Data sets | L |
| | Indicator/verifier | rce | <u> </u> | G | D P | <u>S</u> | <u> </u> | R | T | <i>v</i> ···· | ıy | | 710 2 | <i>,</i> | 1 | 1010 | , IVII. | 24.4 55.5 | Methodology |
| | Seasonality or periodicity of disturbances | 7 | * | \perp | | 1 | | | 1 ' | 1 1 | 1 | | | | 1 | | | | |
| 248 | Predictability or variability of disturbances | 7 | * | | | 1 | | | | | Щ | | | | 1 | | | | |
| 249 | Human intrusion rates and intensities | 7 | * | | | 1 | | • | 1 | | | | | | 1 | | | | |
| | Identity, distribution, richness, and proportions of | | | | | | | | | | Ш | | | | | | | | |
| | patch types (such as forest types and seral | | | | | | | | | | Ш | | | | | | | | |
| 250 | stages) across the landscape | 7 | * | | | 1 | | | 1 | | Щ | | | | 1 | | | | |
| 251 | Area of late successional forest interior habitat | 7 | * | | | 1 | | • | 1 | 1 1 | 1 | | | | 1 | | | | |
| | Total amount of forest patch perimeter and edge | | | | | | | | | | Ш | | | | | | | | |
| 252 | 2 zone | 7 | * | | | 1 | | | 1 | | Ш | | | | 1 | | | | |
| | Patch size frequency distribution for each seral | | | | | | | | | | Ш | | | | | | | | |
| | stage and forest type, and across all stages and | | | | | | | | | | Ш | | | | | | | | |
| | Btypes | 7 | * | _ | | 1 | | | 1 | | Ц | | | _ | 1 | | | | |
| 254 | Patch size diversity index | 7 | * | _ | | 1 | | | 1 | | Ц | | | _ | 1 | | | | |
| | Size frequency distribution of late successional | | | | | | | | | | Ш | | | | | | | | |
| | interior forest patches (minus defined edge zone, | | | | | | | | | | Ш | | | | | | | | |
| | susually 100-200 m) | 7 | * | 4 | | 1 | | | 1 ' | 1 1 | Ш | | | | 1 | 4 | | | |
| | Forest patch perimeter: area ratio | 7 | * | \bot | | 1 | | | 1 ' | 1 1 | 1 | | | | 1 | - | 1 | | |
| | 7 Edge zone:interior zone ratio | 7 | * | 1 | | 1 | | | 1 | | Ш | | | | 1 | | | | |
| 258 | Fractal dimension | 7 | * | ╙ | | 1 | | | 1 | | Ц | | | | 1 | _ | | | |
| 259 | Patch shape indices | 7 | * | | | 1 | | - | 1 | | Ш | | | | 1 | | | | |
| 260 | Patch density | 7 | * | | | 1 | | • | 1 | | | | | | 1 | | | | |
| 261 | 1 Fragmentation indices | 7 | * | | | 1 | | • | 1 | | | | | | 1 | | | | |
| | Interpatch distance (mean, median, range) for all | | | | | | | | | | П | | | | | | | | |
| | forest patches and for late successional forest | t | | | | | | | | | Ш | | | | | | | | |
| 262 | 2 patches | 7 | * | | | 1 | | | 1 | | Ш | | | | 1 | | | | |
| | Juxtaposition measures (percentage of area | | | | | | | | | | Ш | | | | | | | | |
| | within a defined distance from patch occupied | | | | | | | | | | Ш | | | | | | | | |
| | by different habitat types, length of patch border | | | | | | | | | | Ш | | | | | | | | |
| 263 | Badjacent to different habitat types) | 7 | * | 4 | | 1 | | | 1 | | Ш | | | | 1 | 4 | | | |
| | Structural contrast (magnitude of difference | | | | | | | | | | | | | | | | | | |
| | between adjacent habitats, measured for various | | _ | | | | | | | | | | | | | | | | |
| 264 | 4structural attributes) | 7 | | + | | 1 | - | | _ | | $\vdash \vdash$ | | \dashv | + | 1 | - | + | | |
| 0.15 | Road density for different classes of road and all | | | | | | | | | | | | | | 1 | | | | |
| | road classes combined | / | * | + | | | | | _ | | H | | + | + | 1 | - | - | | |
| 266 | Disturbance indicators (see above) | 7 | | + | | 1 | 4 | | ╀ | <u> </u> | $\vdash \vdash$ | | | + | 1 | - | + | | |
| 0.7- | Rates of nutrient, energy, and biological transfer | | * | | | _ | | | | | | | | | 1 | | | | |
| 267 | between different communities and patches in | / | | | | 1 | | | | | | | | | I | | | | |

| | | | Leve | | | | | | | | | | mati | c ar | ea | | ٦ | | |
|-----|--|------|-------|-----|----------------|---------|-----|----|-------|-------|-----|----|--------|------|-----|------|--------|---|---|
| No. | Indicator/verifier | Souk | biol. | org | Indicat D P | ort | ype | Su | itabi | ility | , W | AG | G DL I | FO I | W N | 1C N | 1t | Data sets | Methodology |
| NO. | the landscape | 100 | | T | UP | 3 | | Н | | Ť | | | | | T | | 十 | | wethodology |
| 335 | Self-regenerating habitat | 10 | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | f 1 | Remote sensing data, vegetation maps, national orest cover inventories, coastal zone maps, vetland and freshwater inventories Remote sensing data, vegetation maps, national | Overlay maps, GIS, Aerial surveys, Ground truthing |
| 336 | Man-made habitat | 10 | | | | 1 | | 1 | 1 | | | L | 1 | 1 | 1 | 1 | f 1 | orest cover inventories, coastal zone maps, vetland and freshwater inventories | Overlay maps, GIS, Aerial surveys, Ground truthing |
| 337 | Native vegetation fragmentation | 10 | | | | 1 | | 1 | 1 | | | 1 | 1 1 | 1 | 1 | 1 | | and use plans, remote sensing data, surveys, FAO data | GIS, overlay maps |
| 338 | Wetland drainage and filling | 10 | | | | 1 | | 1 | 1 | | 1 | L | | 1 | 1 | | F | | GIS, overlay maps |
| 339 | Conversion of coastal areas | 10 | | | | 1 | | 1 | 1 | | | L | 1 | 1 | 1 | 1 | 1 | | GIS, overlay maps |
| 340 | Erosion | 10 | | | | 1 | | 1 | 1 | | | 1 | 1 1 | 1 | | | | and use plans, remote sensing data, surveys, FAO data | GIS, overlay maps |
| 342 | Species richness | 10 | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | | Natural biodiversity data base, surveys, ransects, 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 | Vide 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 paren regression, DNA sequencing, electrophoresis karyotypic analysis |
| 348 | Replacement of land races with few imported ones | 10 | | | | 1 | | L | | | | | 1 | 1 | 1 | 1 | 1, | Allelic diversity, karyotype variants | Morphological analysis, offspring paren regression, DNA sequencing, electrophoresis karyotypic analysis |
| | Size and distribution of protected areas according to IUCN 1-6 | 9 | * | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Number of endemic, threatened/endangered/vulnerable species by taxonomic group | | * | | | 1 | | 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 | | |

| | T. | | | | _ | | | | | | | | - | | | | | | | T | Page 4/ |
|------|--|-----|-----|----------|------|-------------|------|------------|----|-----|-----------|-----|---|------|------|------|----------|----------|----------|-----------|-------------|
| | | | | el (| | | | | | | | | | Ther | mati | ic a | irea | | | | |
| l | l | Sou | bio | l. or | g In | idicat P | or t | ype | C. | ;+- | .1.:1 | it. | W | AG | וח | FΩ | //// / | MC . | ΛΛŧ | Data sets | |
| No. | | rce | E | S | G D | Р | S | <u>l F</u> | Sh | ши | wu | uy | | ΑU | DL | , 0 | 1 7 7 | VIC I | IVIL | N | lethodology |
| | Number of threatened mammal, bird, fish, and | | | | | | | | | | | | | | | | | | | | |
| 354 | reptile species | 9 | * | | | | 1 | | | 1 | 1 ' | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Number of endangered mammal, bird, fish, and | | | | | | | | | | | | | | | | | | | | |
| 355 | reptile species | 9 | * | | | | 1 | | | 1 | 1 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Percentage of protected area of different | İ | | | | | | | | | | | | | | | | | | | |
| 358 | ecosystem types | 9 | * | | | | 1 | | | 1 | 1 - | 1 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| | Species of communal interest of all indigenous | | | | | | | | | | | | | | | | | | | | |
| 359 | species (percent) | 9 | * | | | | 1 | | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Endangered species of all indigenous species | | | | | | | | | | | | | | | | | | | | |
| 360 | (percent) | 9 | * | | | | 1 | | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Alien species of all indigenous species (percent) | 9 | * | | | | 1 | | | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Total forest area | Q | * | \dashv | | | 1 | | | 1 | 1 | t | | | H | 1 | H | Ħ | | | |
| | Total forest area as a percentage of total land | , | | | | | -1 | | | ╈ | 1 | | | | | - | | | | | |
| | area | 0 | * | | | | 1 | | | 1 | 1 | | | | | 1 | | | | | |
| 300 | | 7 | | - | | | - | | | ╫ | ╫ | | | | | - | | | | | |
| 247 | Percentage of forest cover by forest type | 0 | * | | | | 1 | | | 1 | 1. | 1 1 | | | | 1 | | | | | |
| | (primary, secondary or plantation) | 9 | * | | | | 1 | + | | + | 1 | 1 1 | | | | 1 | | | | | |
| 369 | Self-generating area as a percentage of total area | 7 | l ^ | - | | | - 1 | | | ╁ | - | - | | | | I | | | | | |
| 070 | 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 | | | | | |
| | Percentage of forest land managed for recreation | | | | | | | | | | | | | | | | | | | | |
| | and tourism to total forest area | 9 | * | | | | 1 | | | 1 | | 1 | | | | 1 | | | | | |
| | Area and percentage of forests managed for | - | | | | | | | | | | | | | | | | | | | |
| | catchment protection | 9 | * | | | | 1 | | | 1 | | 1 | | | | 1 | | | | | |
| | Percentage of forest protected areas by forest | t | | | | | | | | | | | | | | | | | | | |
| | type by age, class and successional stage | 9 | * | | | | 1 | | | | | | | | | 1 | | | | | |
| | Area and length and numbers of biological | l | | | | | | | | | | | | | | | | | | | |
| 375 | corridors | 9 | * | | | | 1 | | | 1 | | | | | | 1 | | | | | |
| 378 | Number and size of forest fires | 9 | * | | | | 1 | | | 1 | | 1 | | | | 1 | | | | | |
| | Reforested and afforested areas | 9 | * | | | | 1 | | | 1 | | 1 | | | | 1 | | | | | |
| | Relationship between forest cover and | Í | П | 寸 | | | Ť | | | Ť | 1 | Ť | | | | | | \Box | | | |
| | frequency of flooding | 9 | * | | | | 1 | | | 1 | 1 . | 1 1 | | | | 1 | | | | | |
| 301 | Forest conversion affecting rare ecosystems by | , | H | | | | 1 | | | ╈ | 1 | † | | | | | | | | | |
| 385 | area | Q | * | | | | 1 | | | | | | | | | 1 | | | | | |
| | Extent of mixed stands | 0 | * | + | | | 1 | | | + | \dagger | I | | | | 1 | | | | | |
| | | 9 | * | \dashv | | | 1 | | + | + | + | ╁ | H | | | | | \vdash | | | |
| 388 | Estimate of carbon stored | 9 | H | \dashv | | | -1 | | | + | - | 1 | H | | | H | \vdash | \vdash | \vdash | | |
| 25.5 | Number of threatened keystone, flagship | | | | | | | | | | | | | | | _ | | | | | |
| 389 | species | 9 | | ^ | | | | | | | | 1 | | | |] | | | | | |

| | | | evel | | | | | | | | | Ther | nati | ic ar | ea | | | | |
|-----|---|-------------|--------------|----------|----------------|---------------|----------|----|------|-------|---|------|------|-------|-----|------|----|-----------|------------|
| No. | Indicator/verifier | Soub rce | iol. o FS | org G | Indicat D P | tor ty S I | ype R | Su | tabi | ility | W | AG | DL I | FO II | N M | IC N | 1t | Data sets | ethodology |
| | Number of extinct, endangered, threatened, | | | Ť | | | | | | | | П | | | | | | | |
| | vulnerable and endemic forest dependent | | | | | | | ш | | | | ш | | | | | | | |
| | species by group (e.g. birds, mammals, | | | | | | | | | | | ш | | | | | | | |
| | vertebrates, invertebrates) | 9 | * | | | 1 | | 1 | 1 | 1 | 1 | Н | | 1 | | 4 | _ | | |
| | List of flora and fauna | 9 | * | | | 1 | | 1 | 1 | 1 | 1 | Н | | 1 | 4 | _ | _ | | |
| 394 | Number and population size of forest dependent species (e.g. birds) | 9 | * | | | 1 | | | | | | | | 1 | | | | | |
| | 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 | | | | | |
| | Number of forestdependent species that occupy a small portion of their former range | 9 | * | | | 1 | | 1 | 1 | 1 | 1 | | | 1 | | | | | |
| | The number of forest-dependent species | 9 | * | | | 1 | | П | | Ť | | | | 1 | | | | | |
| | Extent of area by forest type in protected area categories as defined by IUCN or other classification systems | | * | | | 1 | | 1 | 1 | 1 | 1 | | | 1 | | | | | |
| | Extent of area by forest type and by age class or successional stage | 9 | * | | | 1 | | 1 | | | | | | 1 | | | | | |
| | Extent of area by forest type relative to total forest area | 9 | * | | | 1 | | 1 | | | | | | 1 | | | | | |
| | 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 | | | | | |
| | Number of exotic and local species outbred and location of affected areas | 9 | * | | | 1 | | | | | | | | 1 | | | | | |
| | Area of protected areas by vegetation type as percentage of total area | 9 | * | | | 1 | | 1 | 1 | | | | | 1 | | | | | |
| | Revegetated areas by species or genus in hectares per annum and reasons thereof | 9 | * | | | 1 | | 1 | 1 | | 1 | | | _1 | | | | | |
| | Percentage of forest used by people for subsistence | 9 | * | | | 1 | | | | | | | | 1 | | | | | |

| | | | Leve | l o | f | | | | | | | Ε | Ther | nati | ic aı | rea | | | | Page 49 |
|------|---|-----|--------|-----------|---------------|------|----------------|---|----------|--------------|----------|---|------|------|-------|-------|-------|-----|---|--|
| | | | | | Indica D P | ator | typ | е | . | , . . | . | | | | | | 10. | 44 | Data sets | |
| No. | | rce | E S | S Ğ | D P | S | ĺ | R | Suu | tabi | lity | | AG | DL I | FO I | VV IV | /IC I | VIT | Data sets | Methodology |
| | Number of wild species used for subsistence | | | | | | | | | | | | | | | | | | | |
| 422 | (including food) by communities | 9 | - | * | | | | | 1 | 1 | + | | | | 1 | | | | | |
| 422 | Number of species of crops and trees used by local residents | 0 | | * | | | | | 1 | 1 | | | | | 1 | | | | | |
| | Woodlands (sq. km) | 9 | | * | | | | | 1 | 1 | 1 1 | | | | 1 | | | | | |
| | Riverine forest (sq. km) | 9 | | * | | | | | 1 | 1 | 1 1 | | | | 1 | | | | | |
| | T . | 9 | + | * | | + | | | + | + | + | | | | 1 | - | | | | |
| | Riverine percentage of total land Mangrove forest (sq. km) | 9 | | * | | | | | 1 | 1 | 1 1 | | | | 1 | | | | | |
| | Mangrove percentage of total land | 9 | + | * | | + | | | 1 | ╫ | + | | | | 1 | + | | | | |
| 420 | Seedlings planted annually, exotic versus | 9 | | + | | | l I | | - | + | | | | | - 1 | | | | | |
| 429 | indigenous | 9 | | * | | | 1 | | 1 | 1 | 1 1 | | | | 1 | | | | | |
| , | Percentage of protected productive forest area of | | | | | | | | İ | İ | Ì | | | | | | | | | |
| 430 | total productive area | 9 | | * | | | 1 | | | | | | | | 1 | | | | | |
| Impa | ct indicators of forest biological diversity | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | Standard canopy cover methods, possibly done |
| | | | | | | | | | | | | | | | | | | | Canopy cover in percent at the upper canopy | |
| | Crown cover (%) | 2 | * | + | | | 1 | | 1 | 1 | 1 | | | 1 | 1 | | | 1 | level | season |
| | Surface displacement | 2 | * | + | | - | 1 | | 1 | 1 | | | 1 | 1 | 1 | | 4 | 1 | | |
| 2/ | Total area of a particular habitat/vegetation type | | * | - | | - | 1 | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| 20 | Size of largest block of each habitat/vegetation type | 2 | * | | | | 1 | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| 20 | Mean nearest distance between blocks of a | | + | + | | + | ' | | + | ╫ | + | | | - | - 1 | + | - 1 | _ | | |
| 29 | particular habitat type | 2 | * | | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Number and distribution of keystone or indicator | | | T | | | | | | Ť | | | | | | | | | | |
| 33 | 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 | | |
| | Quantity of specimens or species of | | | | | | | | | | | | | | | | | | | |
| | economic/scientific interest removed from the | | | | | | | | | | | | | | | | | | | |
| 41 | environment | | * : | * | | - | 1 | | + | - | + | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| 40 | Proportion of protected area to converted/utilized | 2 | * | | | | 1 | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | | |
| | area Erosion/loss of genetic diversity patrimony | 2 | * | * * | | | 1 | | + | + | + | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| 44 | Population growth and fluctuation trends of | | + | + | | | \vdash | | \dashv | + | + | | | - | - | + | + | - | | |
| 49 | special interest species | 2 | * : | * | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| - 17 | Ratio between exotic species plantation area | | \top | \dagger | | | | | Ť | 十 | | | | | | Ť | Ť | | | |
| 55 | and native species in plantation area | 2 | | * | | | 1 | | 1 | 1 | 1 1 | | | 1 | 1 | | | 1 | | |

| | | | Leve | | | | | | | | | The | mati | ic a | rea | | |
|------|---|------|----------|-----|--------------|------------|---|-------------------|------|-------------------|----------|---------|----------|------|--------|----------|---|
| | | Soul | oiol. | org | Indicate D P | or typ | е | Sui | tah | 7; _f , | , W | AG | DL I | FO I | /\// A | 1C N | Mt Data sets |
| | Indicator/verifier | | E S | G | D P | <u>S I</u> | R | Sui | ıuvı | ш | <i>'</i> | /10 | | 101 | VV /V | 10 10 | Methodology |
| | Number of non-indigenous species present (by | 1 | | | | | | | | | | Ι. | | | | | |
| 63 | taxonomic group) | 2 | <u> </u> | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ,- | Change of number of species (species richness) | | | | | | | | | | | Ι. | | _ | | | |
| | over time (increase/decrease) | 2 | | | | 1 | | | _ | - | | 1 | 1 | 1 | 1 | 1 | |
| | Species groups: total number vs. threatened | | | | | | | | | 1 | | | _ | 4 | 4 | 4 | |
| 6/ | species | | + | - | | | | $\vdash \dashv$ | + | + | 1 | Н | Н | I | - 1 | + | |
| / (| Species with smaller population size vs larger | 2 | , | | | | | 1 | 1 | | | Ι, | 1 | 1 | 1 | 1 | |
| 00 | population size Percentage change of number of native species | 4 | + | - | | - | | Н | + | - | | H | | I | - 1 | + | |
| 72 | precentage change of number of halive species of grasses and herbs | 2 | , | ŧ. | | | | 1 | 1 | 1 | 1 | ١, | 1 | 1 | | | |
| | Number of species in taxonomic group | 1 4 | + | | | - | | - | + | + | ı | H | <u> </u> | ı | | \dashv | |
| | Threatened with extirpation | ່ | , | * * | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| - '' | Number of endemic species in taxonomic group | | + | + | | | | | + | † | 1 | H | ' | - | - | ╁ | <u>'</u> |
| 78 | Sthreatened with extinction | 2 | , | * | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | Species risk index | 2 | , | * * | | 1 | | H | Ť | Ť | | 1 | 1 | 1 | 1 | 1 | |
| | Species with stable or increasing populations | | t | | | | | | | \dagger | | т | | | • | Ť | |
| 80 | (number or percent) | 2 | , | * * | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | |
| | Species with decreasing populations (number or | | | | | | | | | | | | | | | | |
| 81 | 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 | |
| | Chemically induced acute poisonings of humans | 3 4 | | | | 1 | | 1 | | | | 1 | | 1 | 1 | | |
| | | | | | | | | | | T | | | | | | T | Remote sensing data (vegetation maps may Manual methods using overlay maps, or GI |
| 268 | Change of total area of a particular habitat type | 8 | * | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1already exist for baseline) where feasible |
| | Change of area of largest block of a particular | | | | | | | | | Ì | | | | | | | Remote sensing data (vegetation maps may Manual methods using overlay maps, or GI |
| 269 | habitat type | 8 | * | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1already exist for baseline) where feasible |
| | Change of average size of a particular habitat | | | | | | | | | | | | | | | | Remote sensing data (vegetation maps may Manual methods using overlay maps, or G |
| 270 | type | 8 | * | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1already exist for baseline) where feasible |
| | Change of mean nearest distance between | 1 | | | | | | | | | | | | | | | Manual methods using overlay maps, or GI |
| 271 | blocks of a particular habitat type | 8 | * | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 Remote sensing data or measured in the field where feasible |
| | Change of average width of break in ar | 1 | | | | | | | T | | | | | | T | T | Manual methods using overlay maps, or GI |
| 272 | identified habitat corridor | 8 | * | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | 1 Remote sensing data or measured in the field where feasible |
| | Change of number or total area of protected | İ | | | | | | | | | | | | | | | |
| 273 | areas | 8 | * | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 Spatial plans GIS or overlay maps |
| | Change of total area of land uses compatible | | | | | | | | | | | | | | | | Remote sensing data or field reports. Land us |
| | with biodiversity conservation in the monitoring | | | | | | | | | | | | | | | | maps are likely to be available from oth |
| | area | 8 | * | - | | 1 | | ${oxed{\square}}$ | 4 | - | | \perp | 1 | 1 | 1 | 1 | 1 Area of identified compatible land uses 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 don |

| | | | Le | vel | of | | | | | | | J | Ī | hem | natic | are | ea | | | Page 31 |
|-----|--|--------|------------|-------|----|-------------------|------------|-----|----|-----|------|------------|---|-------|-------------|------|-------|--------------|--|---|
| | | Sou | Jbio | ol. o | rg | Indicate D P : | or ty | ype | G. | ita | L;I; | <u>,</u> \ | ٧ | AG I | DI F | n IV | V 1/1 | ^ <i>\</i> \ | Data sets | |
| No. | Indicator/verifier | rce | e E | S | G | D P | <u>S I</u> | R | Su | ши | viii | ıy | Ļ | 710 1 | <i>JL 1</i> | 0 11 | V 1V1 |) IVIL | | Methodology |
| | | | | | | | | | | | | | | | | | | | | seasonally , or at least annually in the same season |
| 276 | Change of location of habitat boundaries | 8 | 8 * | | | | | 1 | | 1 | 1 | П | | | 1 | 1 | 1 | | | 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 | r { | 8 * | | | | | 1 | 1 | 1 | 1 1 | 1 | 1 | 1 | 1 | 1 | | | 1Transect or wide area survey results | Survey of transects or sites, frequency depends on the species involved |
| | Change of limiting factors for key species, e.g nest holes for parrots, fruit bat roosting trees | . 8 | 8 * | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | Numbers, or presence/absence depends on the 1 factors involved | |
| | Changes in frequency of events such as landslips | 8 | 8 * | | | | | 1 | 1 | 1 | 1 1 | 1 | | 1 | 1 | 1 | | | | Incorporate into patrol reporting. Carry out specific surveys for identified events. |
| | Abundance (number per taxonomic group) o key animal species | f { | 8 | * | | | | 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 1 patrol reports | Management staff monitor transects (e.g. sections |
| 285 | Range of designated species (either total range or range within monitoring area) | 8 | 8 | * | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | Combination of sighting data and transect sign 1 data. | National level staff combine indicator data for al relevant areas. |
| | Amount of plant or animal material by species narvested in protected area | { | 8 | * | | | | 1 | 1 | 1 | 1 | | 1 | | 1 | 1 | 1 | 1 | Amount of resource harvested in a defined area 1 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 on 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 | Combination of : field evidence and village and 1 market surveys. | Information collected by management patrols from villagers or from market traders. |
| | Area and extent of degraded lands reclaimed through forest operations Area of stands managed for conservation and utilization of genetic resources (gene reserves, seed collection stands, etc.) | d | 9 * 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 | | | | |
| | Area of forest area affected by natural disasters (Insect attack, disease, fire and flooding) | | 9 * | | | | | 1 | 1 | _1 | 1 | _1 | | | | 1 | | | | |
| | The status (threatened, rare, vulnerable endangered, or extinct) of forest-dependen species at risk of not maintaining viable breeding populations, as determined by legislation or scientific assessment) | t | 9 | * | | | | 1 | | | | | | | | 1 | | | | |

| | | | evel | | | | | | | | | | The | mat | ic a | rea | | | |
|------|--|-----|-------|-----|---------------|----------|---------|---|--------|------|------|---|----------|----------|------|----------|------|----|----------------------------------|
| | | Sou | oiol. | org | Indica D P | itor | type | } | ริบก่า | tahi | litv | W | AG | DL | FΟ | IW N | 1C I | Μt | Data sets |
| | | rce | E S | _G | D P | <u>S</u> | 4 | R | | uon | T | | | | | | | | Methodology |
| 400 | Fragmentation of forest types | 9 | + | + | | - | | | + | - | + | | | | - 1 | \vdash | | | |
| 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 | | | | |
| Resp | oonse indicators of forest biological diversity | | | | | | | | | | | | • | | | | | | · |
| 30 | Average width of break in an identified habitat corridor | 2 | * | | | | | 1 | | | | | 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 | 1 |
| 32 | Location of habitat boundaries | 2 | * | | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | |
| 84 | Number of threatened species in taxonomic groups in <i>ex situ</i> collections | 2 | * | * | | | | 1 | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | | |
| 85 | Number of threatened species in taxonomic group with viable <i>ex situ</i> populations | 2 | * | * | | | | 1 | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Environmental protection expenditures as a percent of GDP | 4 | | | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Decentralized local-level natural resource management | 4 | | | | | | 1 | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Managed forest area ratio | 4 | | t | | | | 1 | 1 | | | | <u> </u> | <u> </u> | 1 | Ħ | - 1 | | |
| | Protected forest area as a percent of total forest area | 4 | | | | | | 1 | 1 | 1 | 1 1 | | | | 1 | | | | |
| | Protected area as a percent of total area | 4 | | | | | | 1 | 1 | 1 | 1 1 | | | 1 | 1 | 1 | 1 | | |
| | Expenditure on air pollution abatement | 4 | | | | | | 1 | 1 | | 1 1 | | 1 | 1 | 1 | 1 | | | |
| | 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 | | | | |
| | Mandated environmental impact assessment | 4 | | | | | | 1 | 1 | 1 | 1 1 | | | 1 | 1 | 1 | 1 | | |
| | Scientists and engineers engaged in research and development per million population | 4 | | | | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Implementation of ratified global agreements | 4 | | Ī | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| | Programmes for national environmental statistics | 4 | | T | | | | 1 | | | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| 299 | Number of awareness programmes undertaken | 8 | * | | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 Project reports Annual surveys |

| | T | | 1 - | wol. | <u></u> | d | | | | | | | c F | Then | natio | | | | 1 | Page 53 |
|-------------|--|-----|-----|------------|---------|--------|---|-------------|----|----------|------|----------|-----|----------|-------|-----|-----|------|---|---|
| | | 501 | | evel | | Indica | | ł., | | | | | | rnen | nauc | are | d | | | |
| No. | Indicator/verifier | rc | e E | 01. C S | лу G | D P | S | type I I | Sı | ıita | ıbil | ity | VV | AG | DL F | ОМ | V M | C Mt | Data sets | Methodology |
| 300 | Number of schools visited | | 8 * | | | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 Project reports | Annual surveys |
| | Community cooperation with conservation staff | | | | | | | | | | | | | | | | | | Results of interviews and PRA with communitie | S |
| 301 | (such as anti-poaching activities, monitoring) | | 8 * | | | | | | 1 | 1 | 1 | 1 1 | | | | 1 | 1 | 1 | 1 and government agency staff. | Interviews and PRA |
| | | | | | | | | | | | | | | | | | | | Results of interviews and PRA with communitie | 5 |
| 302 | Self-monitoring of resource by users | | 8 * | | | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 and government agency staff. | Interviews and PRA |
| | Establishment of clearly defined boundaries and | | | | | | | | | | | | | | | | | | | Review records, rules and regulations (annua |
| 303 | membership of resource using group | | 8 | | | | | | 1 | 1 | | | | | | 1 | 1 | 1 | 1 Project records, local rules, regulations | or less frequently) |
| | Existence of representative coordinating or | r | | | | | | | | | | | | | | | | | | Annual surveys of communities and conservation |
| 304 | management body | | 8 * | | | | | | 1 | 1 | | 1 | | | | 1 | 1 | 1 | 1 Management records | staff, local records, interviews. |
| | | | | | | | | | | | | | | | | | | | | Review of status of exisiting and pendi |
| | Change of the legal and regulatory framework at | i | | | | | | | | | | | | | | | | | | legislation and policies, including legislation |
| 305 | the national level | | 8 * | | | | | | 1 | | | | | | | 1 | 1 | 1 | 1 Official gazette, national law registry | protected areas and endangered species |
| | Change of the legal status of an area (e.g. legal | I | | | | | | | | | | | | | | | | | | |
| 306 | gazettment), including definition of boundaries | | 8 * | | | | | | 1 | <u> </u> | | | | | | 1 | 1 | 1 | 1 Official gazette, national law registry | Review status of boundary demarcation |
| | | | | | | | | | | | | | | | | | | | | Evaluate incorporation of project management |
| | Permanent institutional arrangements and/or | r | | | | | | | | | | | | | | | | | | units into permanent structures, co-manageme |
| 307 | management structure | | 8 * | | | | | | 1 | 1 | | 1 1 | | | | 1 | 1 | 1 | 1 Structural organization of management | arrangements, decentralisation of management. |
| | | | | | | | | | | | | | | | | | | | | Track the development and implementation |
| | | | | | | | | | | | | | | | | | | | | policies and laws which define user rights in a |
| 308 | Change of use rights at a project site | | 8 * | | ╀ | | | | 1 | - | | | | | | 1 | 1 | 1 | 1 Government policies and law on use rights | area. |
| | Local level or resource user/regulator | | | | | | | | | | | | | | | | | | | |
| | awareness of the important components o | | | | | | | | | | | | | | | | | | | |
| 000 | relevant resource management laws and | | 0 * | | | | | | | | | | | | | 4 | 4 | 1 | 16 | |
| 309 | regulations | | 8 * | £ | + | | | | | - | - | | | | | + | + | 1 | 1 Survey and intervies data | Surveys and interviews |
| | | | | | | | | | | | | | | | | | | | | Establish agreed acceptable level and calcua |
| 210 | The second of the time of time of time of the time of the time of the time of the time of the time of time of time of time of time of time of the time of time | | . * | | | | | | 1 | 1 | 1 | | | | | 1 | 1 | 1 | Evidence of infringements (physical evidence in | 3 |
| 310 | The number of infringements | | 8 | ╁ | ╁ | | | | | + | ╄ | | - | | + | ╫ | + | + | 1 field, community reports, official records) | with stakeholders. |
| | Percentage of arrests (protected area | | | | | | | | | | | | | | | | | | | |
| 211 | infringement, trade of endangered wildlife | ÷, | 0 | * | | | | | 1 | | | | | | | 1 | 1 | 1 | 1 Field and official/court reports | Calqualta from field and afficial/court reports |
| 311 | bushmeat) leading to conviction | | ŏ | | + | | | | - | + | - | + | | | | + | + | 1 | 1 Field and official/court reports | Calcualte from field and official/court reports |
| 211 | Change of percent of repeat offenders appearing | | 0 * | | | | | | 1 | | | | | | | 1 | 1 | 1 | 1 Field and official/court reports | Calcuatto from field and official/court reports |
| 3 1∠ | n court | | Q | + | + | | | + | | - | + | + | | \dashv | + | + | + | 1 | 1 Field and official/court reports | Calcualte from field and official/court reports |
| 212 | Proportion of budget allocated to highest priority conservation management areas/functions | | 0 * | | | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 Budget documents | identify highest priorities and revies budç allocation annually. |
| 313 | Change of sustainability of funding for | | O | + | ╁ | | | + | | 1 | ╄ | + | | \dashv | + | + | + | + | Information on (proposed or actual) managemen | |
| 21/ | , , | 1 | 0 * | | | | | | 1 | | | | | | | 1 | 1 | 1 | | |
| 314 | management | | O | + | ╁ | | | + | | ╁ | + | \vdash | | \dashv | + | + | + | + | 1 funding sources. Annual budget. Local financial records. Results o | Review information annually or less often |
| 215 | Availability and timeliness of release of funds | | 0 * | | | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | ů . | |
| 315 | Availability and timeliness of release of funds | | Ŏ. | | | | | | | 1 | 1 | | | | | I | I | 1 | 1 interviews with local management staff. | results. |

| | | | Leve | | | | | | | | E | Th | ema | tic a | area | | | | |
|------|--|-----|----------|--------|--------------------|----------------|----|------------|------|-------|-----|------------|------|-------|------|----|----------|--|--|
| No | Indicator/verifier | Sou | biol. | org | g Indicat G D P | or ty | pe | Suit | tabi | ility | , W | / A | G DL | .FO | IW I | МС | Mt | Data sets | Methodology |
| INO. | Change of extent to which field and local | 100 | <u> </u> | \top | J D P | 3 | T | Н | T | Ť | | Н | 1 | | | | \sqcap | | wethodology |
| | management staff are involved in, and | | | | | | | ш | | | | | | | | | | | |
| | understand, the budgetary process | 8 | * | | | | | 1 | | | | | | 1 | 1 | 1 | . 1 | Results of interviews with local management staff. | · |
| | The quality and/or quantity of facilities and equipment | 8 | * | | | | | 1 1 | 1 | | | | | 1 | 1 | 1 | 1 | Management records, inventory | ldentify 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 | | Staff records | Calcualte from official records |
| 320 | The average performance rating of staff at a particular location | 8 | * | | | | | 1 1 | 1 | | 1 | L | | 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. |
| | 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 | | * | | | | | 1 | | | | | | 1 | 1 | 1 | 1 | Project/government records, community interviews | Examine records to conduct interviews. |
| | Existence of formal conservation agreements Budget allocated to monitoring, or number of staff trained in monitoring | 8 | * | | | | | 1 1 1 1 | 1 | 1 | 1 | | | 1 1 | 1 1 | 1 | 1 | Project/government records, community interviews Results of review of budget, staffing, management systems | Examine records to conduct interviews. Review budget, staffing and management systems annually or less freguently. |
| | Status of monitoring information management system | 8 | * | | | | | | | | | | | 1 1 | 1 1 | 1 | | Management systems | Review of existing systems |
| | Integration of biodiversity monitoring into the routine duties of field staff | 8 | * | | | | | 1 1 | 1 | 1 | 1 | | , | 1 1 | 1 | 1 | | | Review annual work programms and patro reports. |
| 328 | Extent and timeliness of implementation of scheduled/planned activities | 8 | * | | | | | 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 | l 1 | 1 | | Recorded evidence of unlawful activity, field reports and aerial surveys, results of threal review, new development plans. | Calculate form official reports. Carry out threat review. |
| | Existence of an agreed procedure for conflict resolution on natural resource management issues | | * | | | | | 1 1 | | | | | | 1 1 | 1 | 1 | | Project or government records, documentation of traditional resource management regime | Review records and documents, interviews. |
| | 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. | |
| 333 | Reduced conflicts over access or use rights | 8 | * | | | | | 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. |

| | T | | 1 | | d | | | | | | - | _ I- | -1. | | | _ | | Page 53 |
|-----|---|-----|---------------------|----------|---------------|----------|-------------|-----|------|------|----|------|----------|-------|--------|-----|------|--|
| | | | Leve | | | | L | | | | | | hen | natio | are | a | | |
| No. | Indicator/verifier | rce | oiol. <u>E</u> S | org G | Indica D P | tor t | type I F | Su | ıita | bili | ty | IV | AG I | DL F | O IV | V M | C Mi | Data sets Methodology |
| | land | | | | | | | | | | | | | | | | | |
| | Existence of institutional capacity, policy and | | | | | | | | ĺ | | П | | | | | Ì | | |
| | 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 | | Ш | | | 1 | 1 | 1 | 1 | 1 |
| 357 | NGOs programmes and action plans | 9 | * | | | | | 1 | | | Ш | | 1 | 1 | 1 | 1 | 1 | 1 |
| | Endangered species with plans of action (all | | | | | | | | | | | | | | | | | |
| | categories of endangerment, and all types of | 1 | | | | | | | 1 | | | | | | | | | |
| 362 | plans of action) | 9 | * | \perp | | | | 1 ' | 1 | | 1 | | _ | 1 | 1 | 1 | 1 | 1 |
| 244 | ENP percentage with planning of approved | | * | | | | | 1 | | | | | | | 1 | | | |
| 364 | arrangement, utilization and management | 9 | _ | + | | \vdash | | | ╄ | | Н | + | \dashv | + | + | + | + | |
| 300 | Existence of procedures for identifying endangered, rare, and threatened species | Q | * | | | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | |
| | er indicators of inland water biological diversity | / | | | | | | 1 | 1 | | | | '1 | ' | 1 | 1 | 1 | · |
| | Net population migration rate | 4 | T | T | 1 | | | T. | 1 | 1 1 | П | T | 1 | 1 | 1 | 1 | 1 | |
| | Total fertility rate | 4 | | | 1 | | | | 1 - | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | |
| | Rate of growth of urban population | 4 | 十 | t | 1 | | | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | |
| 100 | Share of natural-resource intensive industries in | | \neg | T | | | T | | 1 | | H | | 寸 | 寸 | 十 | Ť | Ť | |
| 137 | manufacturing value added [?] | 4 | | | 1 | | | | | | | | 1 | 1 | 1 | 1 | 1 | |
| | Annual withdrawls of ground and surface water | 4 | 1 | Ì | 1 | | | | 1 . | 1 | П | | T | T | \top | 1 | | |
| 140 | Domestic consumption of water per capita | 4 | | | 1 | | | | 1 . | 1 | П | | | | | 1 | | |
| | Use of agricultural pesticides | 4 | | | 1 | | | | | | П | | 1 | | | 1 | 1 | |
| 161 | Use of fertilizers | 4 | | | 1 | | | | | | П | | 1 | | | 1 | 1 | |
| 179 | Generation of radioactive wastes | 4 | | * | 1 | | | | 1 . | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | |
| | | | | | | | | | | | П | | | | | Ì | | National or local statistical data or survey returns. Formal census data obtained from releval |
| | Change of total human population inside and | | | | | | | | | | | | - 1 | | | | | Data from baseline and repeated socio-economic agency. Surveys, possibly involving sampling |
| 289 | around (e.g. within 20 km) conservation areas | 8 | * | | 1 | | | Ŀ | 1 ' | 1 1 | 1 | | _ | 1 | 1 | 1 | 1 | 1surveys. Monitor every 2-5 years. |
| | Demographic factors (age structure, settlement | | | | | | | | | | | | | | | | | National or local statistical data or survey returns. Formal census data obtained from relevan |
| | patterns, education levels, etc.) of relevant | | | | | | | | | | | | | | | | | Data from baseline and repeated socio-economic agency. Surveys, possibly involving sampling |
| 290 | human population in or around conservation area | 8 | * | + | 1 | Н | | |] | 1 | 1 | | _ | 1 | 1 | 1 | 1 | 1 Surveys. Monitor every 2-5 years. |
| | Change of proportion of incomes desired from | | | | | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) an |
| າດາ | Change of proportion of income derived from alternative livelihood activities | Q | * | | 1 | | | | 1 | | | | | 1 | 1 | 1 | 1 | other socio-economic survey technique: 1Survey returns possibly every two or three years. |
| 292 | allemative livelinoou activities | Ö | + | + | | H | | + | 1 | | Н | | \dashv | - | + | + | - | Participatory techniques (RRA, PRA, etc.) and |
| | Change of resource consumption for household | | | | | | | | | | | | | | | | | Survey returns, management records, marketother socio-economic survey technique: |
| 203 | use vs. marketing | 8 | * | | 1 | | | | 1 . | 1 | | | | 1 | 1 | 1 | 1 | 1surveys possibly every two or three years. |
| ۷75 | use vs. marketing | O | | | | | | | 4 | 4 | | | | - 1 | - 1 | Ч | -11 | ipui veys posibily every two or tillee years. |

| | | | Leve | | | | | | | | | | em | atic | area | 3 | | | |
|-------|--|------|-------|-----|---------------|------|------|----|------|-------|-------|-----|-----|-------|------|--------|----|---|---|
| No. | Indicator/verifier | Soul | biol. | org | Indica D P | ator | type | Si | uita | ıbilı | ity \ | N A | G E | DL FC |) IW | МС | Mt | Data sets | Methodology |
| | Change of rate of consumption of biodiversity resources by different groups (e.g. local communities vs. outside interests) | | * | | В Р | 3 | | ĸ | | | | | | 1 | 1 - | 1 1 | | Survey returns, management records, market surveys | Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques cossibly every two or three years. |
| 295 | Change of number or percent of people harvesting biodiversity resources | 8 | * | | 1 | | | | 1 | | | | | 1 | 1 . | 1 1 | | Survey returns, management records, market surveys | 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 | | Survey returns, management records, market surveys | possibly every two or three years. |
| | Change of number or percent of people engaging in alternative livelihood activities | 8 | * | | 1 | | | | 1 | | | | | | 1 . | 1 1 | | Survey returns, management records, market | Participatory techniques (RRA, PRA, etc.) and other socio-economic survey techniques cossibly 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 | | <u> </u> | 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 | | Results of structured interviews/questionnaires | Structured interviews and/or questionnaires |
| | Availability of regulated water resources: reserves of reservoir water | 9 | | * | 1 | | | | 1 | | | | | | | 1 | | | |
| | Improvements in the distribution of water Droughts: change of annual rainfall compared to the long-term average rainfall | 9 | | * | 1 | | | | 1 | 1 1 | 1 | | | | | 1 1 | | | |
| Press | sure indicators of inland water biological diversity | | | | | | | | | | | | | | | | | | |
| 8 | Land use | 2 | * | | | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 . | 1 1 | | | FAO recommendation |
| | 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 |
| | Karst activity | 2 | * | | | 1 | | | 1 | 1 | Ш | | 1 | 1 | 1 . | 1 | | | |
| | Streamflow: velocity, volume per time etc. specify seasonality | 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 | | | |
| 38 | Water resource vulnerability index | 2 | * | | | 1 | | | | | Ш | | | | | 1 | | | |
| | Species diversity used for food | 2 | | * | | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 ' | 1 1 | | | |
| | Species used by local residents | 2 | | * * | | 1 | | | 1 | 1 | Ц | | | 1 | 1 ' | 1 1 | 1 | | |
| 134 | Population density | 4 | | | | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 ' | 1 1 | | | |

| | | | Lev | vel | of | | | | | | | F | Th | nem: | atic | area | <u> </u> | | | Page 57 |
|-----|--|------|-----|-----|----|-------------------|--------|----|-----|-----|-------|---|----|------|------|------|----------|------|--|---|
| | | Sou | | | | | or tvi | oe | | | | | | | | | | | | |
| No. | Indicator/verifier | rce | E | S | Ğ | Indicate D P S | S 1 | R | Sui | tab | oilit | y | Α | AG D | L FC |) IW | МС | : Mt | Data sets | Methodology |
| | | | | | | | | | | | | | | | | | | | | CO2, CH4, N2O, NMVOC, CO, Nox, CF(|
| 170 | Emissions of greenhouse gases | 4,11 | | | Ц | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 1 | 1 | | | SO2, HCFC, CF emissions |
| | 1 Emissions of sulphur oxides | 4 | 1 | | Ш | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 1 | 1 | | | |
| 172 | Emissions of nitrogen oxides | 4 | 1 | | Ш | 1 | | | 1 | 1 | 1 | | | 1 | 1 | 1 1 | 1 | | | |
| 173 | Consumption of ozone depleting substances (Chlorofluorocarbons, Halons, chlorinated Bcarbons, HFCFCs)) | | | | | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | | Chlorofluorocarbons: CFs, CF2Cl2 (CFC-1 CFCl3 (CFC-11), CF2ClCF2Cl (CFC-11 CF3CF2Cl (CFC-115), C3FCl7 to C3F3 (CFC-211 to CFC-217), CF3Cl (CFC-11 CFCl2CFCl2 (CFC-112), CF2CCFCl2 (CF113); Halons: CF2ClBr (halon-1211), CF3 (halon-1301), CF3CFBr2 (halon-24 Chlorinated carbons: CCl4), CH3CC HCHCs: CHF2Cl (HCFC-22), CH2F (HCFC-31), CHFCl2 (HCFC-21); Met bromide: CH3Br |
| 173 | Ambient concentrations of pollutants in urbar | | Н | | H | - ' | | | H | - | - | - | - | ╫ | ╫ | + | ╁ | - | | bioillide. Ch3bi |
| 174 | Hareas | 4,11 | | | | 1 | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 - | 1 | | | CO2, SO2, Nox, PM10, VOC, Pb |
| | Proportion of income derived from uncultivated biodiversity resources | | 3 * | | | 1 | | | 1 | 1 | | | | 1 | 1 | 1 1 | 1 - | 1 | l Survey returns | Participatory techniques (RRA, PRA, etc.) a other socio-economic survey technique possibly every two or three years. |
| 330 | Rate of encroachment into PAs | 8 | 3 * | | | 1 | | | 1 | 1 | 1 | | | | 1 | 1 - | 1 - | 1 | Remote sensing data, field reports, land use data. | Remote sensing, aerial survey, map overlaged Should be repeated every two to five year |
| | Depletion of water points | ç | 9 | * | П | 1 | | | 1 | 1 | 1 | | | | | - | 1 | | | |
| 449 | Rate of destruction of water habitats per annum | ç | 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 | Ç | 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 | 1 | | |
| 487 | 7 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 | | | | | 1 | | | |
| 492 | Ore extraction | 11 | 1 * | | | 1 | | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 - | 1 | | |
| | e indicators of inland water biological diversity | | | | | | | | | | | | | 1 | | | | | | |

| | | | Leve | | | | | | | | | | Ther | nati | c ar | ea | | | |
|-----|---|------------|--------------|-----|---------------|-----------|-----------|---|-------|---------|-----|---|------|------|-------|-----|------|----|---|
| No. | Indicator/verifier | Sou rce | biol. E : | org | Indica D P | ator S | type I | R | Suite | abil | ity | W | AG | DL F | FO II | W M | IC N | Λt | Data sets Methodology |
| 15 | Groundwater quality (nitrates, salinity, toxicants) | 2 | * | | | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | Lake levels and salinity | 2 | * | | | 1 | | | 1 | 1 | 1 1 | | | | | 1 | T | | |
| | Stream sediment storage and load | 2 | * | | | 1 | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | | |
| | Limiting factors for key species, e.g. nest holes | | 十 | | | | | | | | | | | | | | 1 | | |
| 34 | for parrots, fruit bat roosting trees | 2 | * | * | | 1 | | | 1 | 1 | 1 1 | | | 1 | 1 | 1 | 1 | 1 | 1 |
| | Fish family diversity | 2 | * | * | | 1 | | | 1 | 1 | 1 1 | | | | | 1 | 1 | | |
| | Percentage of area in strictly protected status | 2 | * | * | | 1 | | | 1 | 1 | 1 1 | | | 1 | 1 | 1 | 1 | 1 | |
| | Number of inland fish species introduced | 2 | * | * | | 1 | | | 1 | 1 | 1 | | | | | 1 | Ť | | |
| | Absolute and relative abundance, density, basal | | | T | | | | | Ť | Ť | T | | | | | Ť | T | | |
| | area, cover, importance value for various | | | | | | | | | | | | | | | | | | |
| 51 | species (plants) | 2 | | * | | 1 | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 |
| | 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 | 1 |
| 53 | Algae index | 2 | <u> </u> | * | | 1 | | | 1 | 1 | 1 1 | | | | | 1 | 1 | | |
| | Threatened fish species as a percentage of total | | | | | | | | | | | | | | | | | | |
| 58 | freshwater fish species known | 2 | <u> </u> | * | | 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 | 1 |
| | Number of endemic species per taxonomic | | | | | | | | | | | | | | | | | | |
| 64 | group | 2 | | * | | 1 | | | 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 | | |
| | Spatial differences in the number of rare vs | | | | | | | | | | | | | | | | | | |
| 69 | common species | 2 | | * | | 1 | | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| | Spatial differences in the number of restricted vs | | | | | | | | | | | | | | | | | | |
| 70 | wide-range species | 2 | | * | | 1 | | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| | Representativeness of intraspecific variability of | | | | | | | | | | | | | | | | | | |
| | endangered and economically important species | 2 | <u></u> | * | | 1 | | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | _ | |
| | Diversity of native fauna | 2 | <u></u> | * | | 1 | | | | \perp | | | 1 | 1 | 1 | 1 | 1 | | |
| | Species richness (number, number per unit area, number per habitat type) | 2 | | * * | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | |
| | Natural capital index framework | 3 | * | | | 1 | | | 1 | 1 | 1 1 | | | 1 | 1 | 1 | 1 | 1 | 1Sum (percent agro-ecosystem quantity * percent For example four quality variables measured |

| | <u> </u> | | Las | /el | Λf | | | | | | | J. | ΕНι | hom | atic | aro | 2 | | <u> </u> | Page 59 |
|-----|--|--------|-----|-----|-----|---------------|------|-------------|----------------------|------|------|----|-------|------|-------|------|------|-----|--|--|
| | | Sau | | | | Indica | tort | wno | | | | | | | | | | | | |
| No. | Indicator/verifier | rce | E | s | G I | Indica D P | S | lype I F | $_{\rm R} _{\rm Si}$ | ıita | bili | ty | " / | AG E | DL FO | O IW | ' MC | Mt | Data sets | Methodology |
| | | | | | | | | | | | | | | | | | | | 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 ' | 1 | | |
| 141 | Groundwater reserves | 4 | 1 | | | | 1 | | | 1 | 1 1 | 1 | | | | | 1 | | | |
| 142 | Concentration of faecal coliform in freshwater | 4 | 1 | | | | 1 | | | 1 | 1 1 | 1 | | | | | 1 | | | |
| 143 | Biochemical oxygen demand in water bodies | 4 | 1 | | | | 1 | | | 1 | 1 1 | 1 | | | | | 1 | | | |
| 150 | Algae index | 4 | 1 | | | | 1 | | | 1 | 1 1 | 1 | | | | | 1 . | 1 | | |
| 154 | National monthly rainfall index | 4 | 1 | | | | 1 | | | 1 . | 1 | 1 | | 1 | 1 | 1 | 1 | | | |
| | Threatened species as a percent of total native species | 4 | 1 | | | | 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 interes species (animals) | , t | 7 | * | | | 1 | | | | | | | | 1 | 1 | 1 - | 1 | | |
| 227 | Distribution and dispersion of special interets species across the region | 5 7 | 7 | * | | | 1 | | | 1 | | Ц | | | 1 | 1 | 1 . | 1 | | |
| 228 | Population growth and fluctuation trends o special interest species | f 7 | 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 | ו | 7 | * | | | 1 | | | 1 - | 1 1 | | | | 1 | 1 | 1 - | 1 | | |
| 230 | Trends in habitat components for special interest species (varies by species) | t 7 | 7 | * | | | 1 | | | | | | | | 1 | 1 | 1 . | 1 | | |
| | Trends in threats to special interest species (depends on life history and sensitivity of species in relation to land use practices and other influences) | f d | 7 | * | | | 1 | | | | | | | | 1 | 1 | 1 - | 1 | | |
| 232 | Identity, relative abundance, frequency richness and evenness of species and guilds (in various habitats) | 7 | 7 * | | | | 1 | | | 1 | | | | | 1 | 1 | 1 - | 1 | | |
| 284 | Difference between largest/longest of a giver fish species in fish catch and largest/longes | | 3 | * | | | 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. |

| Change of abundance and/or distribution of a 343 selected core set of species at percentage of total 344 species or certain taxonomic groups 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | Leve | | | | | | | | Ε | Then | natic | are | a | | Т | | |
|--|-------------|---|------|----------|-----|----------|----------|--------|----------|----------|------|---|------|-------|----------|----|-----------|------|--|---|
| Remote sensing data, vegetation maps, national morest cover investicities, coastal zone map. Overlay maps, GIS, Acrial surveys, Ground investigation maps, national forest cover investicities, coastal zone map. Overlay maps, GIS, Acrial surveys, Ground investigation maps, national forest cover investicities, coastal zone map. Overlay maps, GIS, Acrial surveys, Ground investigation maps, national forest cover investigations, coastal zone map. Overlay maps, GIS, Acrial surveys, Ground investigation maps, national forest cover investigations, coastal zone map. Overlay maps, GIS, Acrial surveys, Ground investigation maps, national forest cover investigations, coastal zone map. Overlay maps, GIS, Acrial surveys, Ground investigation maps, national forest cover investigations, coastal zone map. Overlay maps, GIS, Acrial surveys, Ground investigation maps, national forest cover investigation maps, national forest cover investigation maps, national forest cover investigation maps, national zone powers, constitutional maps, Overlay maps, GIS, Acrial surveys, Ground maps, Coastal maps, Overlay maps, GIS, Acrial surveys, Ground maps, Coastal maps, Overlay maps, GIS, Acrial surveys, Ground maps, Coastal maps, Coastal maps, Coastal maps, Coastal maps, GIS, Acrial surveys, Ground maps, Coastal maps, GIS, Acrial surveys, Ground maps, Coastal maps, GIS, Acrial surveys, Ground maps, Coastal maps, GIS, Acrial surveys, Ground maps, Coastal maps, GIS, Acrial surveys, Ground maps, GIS, Acrial surveys, Ground maps, GIS, Acrial surveys, GIS, Acrial surveys, Ground maps, GIS, Acrial surveys, Ground maps, GIS, Acrial surveys | NI - | | Soul | biol. | org | Indicate | or ty | pe | Sui | tahi | litv | W | AG | DL F | O IW | MC | C Mt | 1t | Data sets | Made at a large |
| 33Self-regenerating habitat 10 | NO. | | rce | <u> </u> | S G | D P S | <u> </u> | T T | | <u> </u> | T | H | ı | - | <u> </u> | Т | Т | + | | метподогоду |
| 335-Self-regeneraling habitat 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | recorded size for species | | | + | | + | + | H | + | + | H | | + | + | ╁ | ╁ | 士 | Demote sensing data vegetation mans national | |
| 336 Man-made habitat 10 11 11 11 11 11 11 11 11 1 | | | | | | | | | | | | | | | | | | | | Overlay maps. GIS. Aerial surveys. Ground |
| 336 Man-made habitat 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 335 | Self-regenerating habitat | 10 | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | | • | |
| 336 Man-made habitat 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | u | | | | | | | | | | | | | | | | F | Remote sensing data, vegetation maps, national | |
| 337 Native vegetation fragmentation 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | | | | | | | | | | | | | | fc | orest cover inventories, coastal zone maps, | Overlay maps, GIS, Aerial surveys, Ground |
| 337 Native vegetation fragmentation 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 336 | Man-made habitat | 10 | | _ | | 1 | | 1 | 1 | - | | | 1 | 1 | 1 | 1 | - | | truthing |
| 338 Welland drainage and filling 10 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 007 | | 10 | | | | | | 4 | 1 | | | 4 | 4 | _ | 4 | _ | | | |
| 338 Metland drainage and filling 339 Conversion of coastal areas 10 11 11 11 11 11 11 11 11 1 | 337 | Native vegetation fragmentation | 10 | | + | | + | - | | + | + | H | - 1 | + | + | ╫ | ╫ | -+ | | GIS, overlay maps |
| 339 Conversion of coastal areas 10 11 11 11 11 11 11 11 11 1 | 338 | Wetland drainage and filling | 10 | | | | 1 | | 1 | 1 | 1 | | | | 1 | 1 | | | | GIS overlay mans |
| 339 Conversion of coastal areas 10 | 330 | wedana aramage and mining | 10 | | | | + | | H | 1 | Ť | | | | + | 1 | \dagger | -+ | | GIO, Overlay maps |
| 342Species richness 10 11 11 11 11 11 11 11 11 11 11 11 11 | 339 | Conversion of coastal areas | 10 | | | | 1 | | 1 | 1 | | | | 1 | 1 | 1 | 1 | | | GIS, overlay maps |
| Change of abundance and/or distribution of a 343 selected core set of species at percentage of total 344 species or certain taxonomic groups 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | | | | | | | | | | | | | | ١ | | |
| 343 selected core set of species as percentage of total Threatened species as percentage of total 344 species or certain taxonomic groups 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 342 | | 10 | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1tr | ansects, sampling reports | Monitoring and research programmes, inventories |
| Threatened species as percentage of total 344 species or certain taxonomic groups 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | 9 | | | | | | | | | | | | | | | | | | Surveys and monitoring programmes depending |
| 344 Species or certain taxonomic groups 10 11 11 11 11 11 11 11 11 11 11 11 1 | 343 | · | | | | | 1 | - | 1 | 1 | 1 | H | | 1 | 1 | 1 | 1 | 1V | Vide area, transect, sample results | • |
| 345 Percent endemic species threatened 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 244 | | | | | | 1 | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 [| indangered and threatened enecies data sets | |
| 345 Percent endemic species threatened 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 344 | species of certain taxonomic groups | 10 | | | | + | | - | + | + | | | + | + | + | ╫ | ╫ | indangered and inteatened species data sets | |
| 346 Threatened species in protected areas 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 345 | Percent endemic species threatened | 10 | | | | 1 | | 1 | 1 | 1 1 | | | 1 | 1 | 1 | 1 | 1E | Indangered and threatened species data sets | |
| Morphological analysis, offspring pare regression, DNA sequencing, electrophores karyotypic analysis Replacement of indigenous crops Replacement of land races with few imported 348 ones Size and distribution of protected areas 350 according to IUCN 1-6 Number of endemic, threatened/endangered/vulnerable species by 352 taxonomic group 9 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | · | | | | | | | | | | | | | | | | T | | Surveys and monitoring programmes depending |
| 347 Replacement of indigenous crops 10 1 1 1 1 1 1 1 Allelic diversity, karyotype variants Replacement of land races with few imported 348 ones 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 346 | Threatened species in protected areas | 10 | | | | 1 | | 1 | 1 | 1 1 | | | 1 | 1 | 1 | 1 | 1E | Indangered and threatened species data sets | on the species involved |
| 347 Replacement of indigenous crops 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | | | | | | | | | | | | | | | | |
| Replacement of land races with few imported 348 ones 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 0.47 | | 10 | | | | | | | | | | | | | | | | | |
| Replacement of land races with few imported 348 ones 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 347 | Replacement of indigenous crops | 10 | - | + | | + | + | H | - | + | H | | + | 1 | 1 | 1 | 11/4 | Allelic diversity, karyotype variants | |
| 348 ones 10 | | Replacement of land races with few imported | | | | | | | | | | | | | | | | | | |
| Size and distribution of protected areas 350 according to IUCN 1-6 9 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | • | | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1₽ | | |
| Number of endemic, threatened/endangered/vulnerable species by 352 taxonomic group 9 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | | | | | | | | | | | | | | T | | - J. J. |
| threatened/endangered/vulnerable species by 352 taxonomic group 9 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 350 | according to IUCN 1-6 | 9 | * | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| 352 taxonomic group 9 * 1 1 1 1 1 1 1 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 1 1 1 1 1 1 1 1 | 250 | . , | 0 | | | | | | 1 | 1 | 1 . | | 4 | 1 | 1 | 1 | 1 | 1 | | |
| Number of threatened mammal, bird, fish, and Number of threatened mammal, bird, fish, and Number of threatened mammal, bird, fish, and Number of threatened mammal, bird, fish, and Number of threatened mammal, bird, fish, and | | i - | 9 | * | + | | 1 | + | 1 | 1 | 1 1 | | - 1 | 1 | 1 | 1 | 1 | # | | |
| | 353 | | 9 | + | + | | + | | \vdash | + | 1 1 | | | + | + | + | 1 | # | | |
| I Stateonie Species I Yi I I I I II II II II II II II II II II | 35 <i>1</i> | reptile species | Q | * | | | 1 | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |

| | | | I | | | | | | | 1 | _ h- | L | -1! - | | | | Page 6. |
|-----|--|-------|------------|----------|--------------------|------------|-----|------|------|-----|------|------|-------|------|----|-----|--|
| | | | evel | | | . 4 | | | | | | nem | atic | area | l | | |
| No. | Indicator/verifier | rce [| 101. 0 | org G | Indicator D P S | rtype I | R S | Suit | abil | ity | N | AG E | DL FC | O IW | МС | Mt | Data sets Methodology |
| | Number of endangered mammal, bird, fish, and | | | Ш | | | | | | | | | | | | | |
| 355 | reptile species | 9 | ۲ | Ц | | 1 | | 1 | 1 1 | 1 1 | | 1 | 1 | 1 1 | 1 | 1 1 | 1 |
| 358 | Percentage of protected area of different ecosystem types | 9 | k | Ш | | 1 | | 1 | 1 1 | 1 1 | | | 1 | 1 - | 1 | 1 1 | 1 |
| | Species of communal interest of all indigenous species (percent) | 9 | | | | 1 | | | | | | | 1 | 1 - | 1 | 1 1 | 1 |
| | Endangered species of all indigenous species (percent) | 9 | | П | | 1 | | | | | | | 1 | 1 - | - | 1 1 | 1 |
| | Alien species of all indigenous species (percent) | 9 | ŧ. | П | | 1 | | 1 | | Ħ | | 1 | 1 | 1 - | - | 1 | 1 |
| | Surface water quality: nitrogen, dissolved oxygen, pH, pesticides, heavy metals, | | | | | | | | | | | | | | | | |
| | temperature | 9 | _ | Н | | 1 | | 1 | 1 | 1 1 | | + | - | + | | - | |
| | Wetland area | 9 | | Н | | 1 | | 1 | + | 1 | | - | - | + | | | |
| 438 | Benthic macroinvertebrates: communities | 7 | } | Н | | 1 | | 1 | - | + | | + | - | + | | - | |
| 439 | Macrophytes: species composition and depth distribution | 9 | * | Ш | | 1 | | 1 | | | | | | | | | |
| 440 | Threatened freshwater fish species as a percentage of total freshwater fish species | 9 | * | Ц | | 1 | | 1 | 1 - | 1 1 | | | | | | | |
| 442 | Number of endemic flora and fauna | 9 | * | Ш | | 1 | | 1 | 1 | 1 1 | | | | - | | | |
| 445 | Changes in fish catches by species | 9 | * | Ш | | 1 | | 1 | 1 1 | 1 1 | | | | - | | | |
| 446 | Species richness (number per unit area, number per habitat) | 9 | * | | | 1 | | 1 | 1 | 1 | | | | , | | | |
| | Indicator species | 9 | * | П | | 1 | | 1 | | 1 | | | | - | | | |
| 450 | Area and state of water per habitat i.e. riverine areas and wetlands | 9 | * | | | 1 | | 1 | 1 - | | | | | | | | |
| | Genetic monitoring of salmon and whitefish | 9 | * | П | | 1 | | | | Ħ | | | | - | | | |
| | Rivers with good quality according to biotic indexes | 9 | * | П | | 1 | | 1 | 1 - | 1 1 | | | | | | | |
| | act indicators of inland water biological diversity | | | | | 1 | | | 1 | | | | | | | | |
| | Quantity of a particular species in fish catches at specified season | 2 | | П | | 1 | | 1 | 1 - | 1 1 | | T | Τ | T . | 1 | | Fisheries Dept. reports, market survey, prid survey, questionnaires |
| | Change of vegetation type along watercourses | 2 | k. | | | 1 | | 1 | 1 1 | | | | | | | | Area of riparian vegetation type, boudary of riparian vegetation, etc. Remote sensing or transect, quadrat survey |
| | Total area of a particular habitat/vegetation type | 2 | k | П | | 1 | | 1 | 1 1 | 1 1 | | 1 | 1 | 1 1 | 1 | 1 | 1 |
| | Size of largest block of each habitat/vegetation type | 2 | | П | | 1 | | 1 | 1 | 1 1 | | 1 | 1 | 1 - | 1 | 1 | |
| | Mean nearest distance between blocks of a particular habitat type | 2 | k | П | | 1 | | 1 | 1 - | | | 1 | 1 | 1 - | 1 | 1 | |

| | | | eve | | | | | | | | | | The | mati | ic a | rea | | | |
|-----|--|-----|-------------|----------|---------------|-----------|-----------|---|-----|------|-----|---|-----|------|------|------|----|----|--|
| No. | Indicator/verifier | rce | iol. E S | org G | Indica D P | ator S | typ∈ I | R | uit | abil | ity | W | AG | DL | FO | IW N | ЛС | Mt | Data sets Methodology |
| 33 | Number and distribution of keystone or indicator species | 2 | * * | ŧ | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 40 | Number of introduced species and genomes | 2 | * * | ŧ | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | Quantity of specimens or species of economic/scientific interest removed from the environment | | * * | * | | | 1 | | | | | | 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 | 1 |
| | Erosion/loss of genetic diversity patrimony Rate of change from dominance of non- domesticated to domesticated species | 2 | * * | * * | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 49 | Population growth and fluctuation trends of special interest species | 2 | * * | ŧ | | | 1 | | 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 | 1 |
| 65 | Change of number of species (species richness) over time (increase/decrease) | 2 | * | ŧ | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| 67 | Species groups: total number vs. threatened species | 2 | * | ŧ | | | 1 | | 1 | 1 | 1 1 | | | 1 | 1 | 1 | 1 | | |
| 68 | Species with smaller population size vs larger population size | 2 | * | ŧ | | | 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 | 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 | | |
| | Chemically induced acute poisonings of humans | 4 | | | | | 1 | | 1 | | | | 1 | | 1 | 1 | | | Remote sensing data (vegetation maps may Manual methods using overlay maps, or G |
| 268 | Change of total area of a particular habitat type | 8 | * | _ | | | 1 | | 1 | 1 | - | | 1 | 1 | 1 | 1 | 1 | | 1 already exist for baseline) 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 | | Remote sensing data (vegetation maps may Manual methods using overlay maps, or G 1already exist for baseline) where feasible |

| | Т | I. | | | | | | _ | | | 1- | F- | | | | | | | Page 63 |
|-----|---|-----|---------------|----------|----------------|------------|----------|-----|------|-------|-----|----|------|-------|------|------|----|--|---|
| | | _ | Level | | | | | | | | | | emat | iic a | irea | | | | |
| No. | Indicator/verifier | Sou | oiol. (FS | org G | Indicat D P | orty Sl | /pe R | Sui | tabi | ility | , W | A | G DL | FΟ | IW I | ИС . | Mt | Data sets | Methodology |
| | Change of average size of a particular habitat type | ρ | * | Ţ | | | 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 |
| | Change of mean nearest distance between blocks of a particular habitat type | ρ | * | | | | 1 | 1 | 1 | | | Г | 1 1 | 1 | 1 | 1 | 1 | Remote sensing data or measured in the field | Manual methods using overlay maps, or GIS where feasible |
| | Change of average width of break in an identified habitat corridor | Q | * | | | | 1 | П | | | | r | 1 1 | 1 1 | 1 | 1 | 1 | Remote sensing data or measured in the field | Manual methods using overlay maps, or GIS where feasible |
| | Change of number or total area of protected areas | ρ | * | | | | 1 | 1 | 1 | 1 | 1 | Г | 1 1 | 1 | 1 | 1 | | Spatial plans | GIS or overlay maps |
| | Change of total area of land uses compatible with biodiversity conservation in the monitoring area | | * | | | | 1 | | 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 | | 1 | | 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 |
| | Abundance (number per taxonomic group) of key animal species | 8 | * | | | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 1 | 1 | 1 | 1 | | 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 |
| | Range of designated species (either total range or range within monitoring area) | 8 | * | | | | 1 | 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. |
| | 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 | ı | 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. |
| | Number of exotic flora and fauna species e.q.fish aquatic weeds | 9 | * | | | | 1 | 1 | 1 | | 1 | | | | 1 | | | | |
| 443 | Changes in distribution and abundance of native flora and fauna | 9 | * | | | | 1 | Ц | | | | | | | 1 | | | | |
| 444 | Number of extinct, endangered, | 9 | * | | | | 1 | 1 | 1 | | | | | | 1 | | | | |

| | | | evel | | | | | | | | | | The | mat | ic a | rea | | | | |
|------|--|------|----------|-----|---------------|----------|----------|----------------|------|------|-----------|---|--------------|------|------|------|----------|----|-----------|-------------|
| No | In dia atombonifian | Sout | oiol. (| org | Indica D P | tor | type | 9 | Suit | tabi | litv | W | AG | : DL | FO. | IW M | IC N | Иt | Data sets | Mathadalagu |
| | Indicator/verifier threatened/endangered/vulnerable/endemic | rce | <u> </u> | T | υP | <u>\</u> | <u> </u> | R [~] | T | | T | | | | | -1 | - | | ľ | Methodology |
| | inland water species by group (e.g. birds, | | | | | | | | | | | | | | | | | | | |
| | aquatic mammals, invertebrates, amphibians, | | | | | | | | | | | | | | | | | | | |
| | vascular plants, bottom fauna) | | | | | | | | | | | | | | | | | | | |
| | Area of water habitats destroyed by types of | | | 1 | | | | | | | 1 | T | | | | T | 1 | | | |
| | activities | 9 | * | | | | 1 | | | | | | | | | 1 | | | | |
| | Salinization of aquifers (coastal and inland) of | | | | | | | | | | | | | | | | | | | |
| 453 | 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 | | | | |
| Resp | onse indicators of inland water biological diversity | / | | | | | | | | | | | | | | | | | | |
| | Average width of break in an identified habitat | | | | | | | | | | | | | | | | | | | |
| 30 | 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 | | |
| | Location of habitat boundaries | | * | | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Number of threatened species in taxonomic | | | | | | | | | | | | | | | | | | | |
| | groups in <i>ex situ</i> collections | 2 | * | * | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | Number of threatened species in taxonomic | | | | | | | | | | | | | | | | | | | |
| | group with viable ex situ populations | 2 | * | * | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | Environmental protection expenditures as a | | | | | | | | | | | | | | | | | | | |
| | percent of GDP | 4 | | | | | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | Waste water treatment coverage and functioning | 4 | | | | | | 1 | 1 | 1 | 1 | 1 | | | | 1 | 1 | | | |
| | Density of hydrological networks | 4 | | | | | | 1 | 1 | 1 | 1 | 1 | | | | 1 | 1 | | | |
| | Data available on maximum sustained yield for | | | | | | | | | | | | | | | | | | | |
| | fisheries | 4 | - | - | | | | 1 | 1 | + | 1 | 1 | | | | 1 | 1 | | | |
| | Decentralized local-level natural resource management | 4 | | | | | | 1 | | | | | 1 | 1 | 1 | 1 | 1 | | | |
| | Protected area as a percent of total area | 4 | + | ╁ | | | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | | |
| | | 4 | | | | | | 1 | 1 | + | 1 | 1 | 1 | 1 | 1 | 1 | + | | | |
| | Expenditure on air pollution abatement | 4 | + | + | | | | | + | + | 1 | | | | Н | - | \dashv | | | |
| | Existence of national biosafety regulations or quidelines | 1 | | | | | | 1 | 1 | | | | 1 | | | 1 | 1 | | | |
| | Number of chemicals banned or severly | 4 | + | + | | | | | + | + | \dagger | T | | | H | + | - | _ | | |
| | restricted | 4 | | | | | | 1 | 1 | | | | 1 | | 1 | 1 | | | | |
| | Mandated environmental impact assessment | 4 | 1 | T | | | | 1 | 1 | 1 | 1 | 1 | <u> </u> | 1 | 1 | 1 | 1 | | | |
| | Scientists and engineers engaged in research | | | t | | | | | Ť | Ť | Ť | T | | | П | 1 | Ť | | | |
| | and development per million population | 4 | | | | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | | | |

| | ı | | | | | | | | | | | | - | . | | | | | | 1 | Page 63 |
|-----|--|-----|-----------|------------|---------|-----------------|-----------|------------|-----------|-----------|------|------|---|----------|------|-------|------|-----|------|---|--|
| | | _ | | vel | - | | | | | | | | | ll he | ema | tic a | area | a | | | |
| No. | Indicator/verifier | Sou | lbio E | ol. o S | rg G | Indicate D P | or t S | ype I F | ${\bf S}$ | uite | abil | lity | W | AC | G DL | .FO | IW | МС | : Mt | Data sets | Methodology |
| 184 | Implementation of ratified global agreements | | 1 | | | | | | 1 | | | | | | 1 1 | 1 1 | 1 - | 1 . | 1 | | |
| | Programmes for national environmental statistics | 5 4 | 1 | | | | | | 1 | | T | | | | 1 - | 1 1 | 1 - | 1 . | 1 | | |
| 299 | Number of awareness programmes undertaken | 3 | 3 * | | | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 - | 1 . | 1 | 1 Project reports | Annual surveys |
| | Number of schools visited | 8 | 3 * | | | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 1 | 1 . | 1 . | 1 Project reports | Annual surveys |
| | Community cooperation with conservation staff | | | | | | | | | | | | | | | | | | | Results of interviews and PRA with communities | , |
| 301 | (such as anti-poaching activities, monitoring) | 8 | 3 * | | | | | | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 - | 1 . | 1 | land government agency staff. | Interviews and PRA |
| | | | | | | | | | | | | | | | | | | | | Results of interviews and PRA with communities | 5 |
| 302 | Self-monitoring of resource by users | 8 | 3 * | | | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 1 | 1 ' | 1 | and government agency staff. | Interviews and PRA |
| | Establishment of clearly defined boundaries and | | | | | | | | | | | | | | | | | | | | Review records, rules and regulations (annua |
| 303 | membership of resource using group | 8 | 3 | | | | | | 1 | 1 | | 1 | | | - | 1 | 1 1 | 1 ' | 1 ' | Project records, local rules, regulations | or less frequently) |
| | Existence of representative coordinating or | ď | | | | | | | | | | | | | | | | | | 1 | Annual surveys of communities and conservation |
| 304 | management body | } | 3 * | | | | 4 | | 1 | 1 | | - | 1 | | - | 1 | 1 1 | 1 ' | 1 ' | Management records | staff, local records, interviews. |
| | Change of the legal and regulatory framework at | | | | | | | | | | | | | | | | | | | | Review of status of existing and pendi |
| | Change of the legal and regulatory framework at the national level | | * | | | | | | 1 | | | | | | | 1 | 1 - | 1 . | 1 . | 1 Official gazette, national law registry | legislation and policies, including legislation protected areas and endangered species |
| 303 | Change of the legal status of an area (e.g. legal | |) | | | | Ħ | | | + | + | + | | | ╁ | H | 1 | 1 | 1 | Micial gazette, Hational law registry | protected areas and endangered species |
| 306 | gazettment), including definition of boundaries | ۶ | 3 * | | | | | | 1 | | | | | | | 1 | 1 - | 1 . | 1 . | l Official gazette, national law registry | Review status of boundary demarcation |
| 300 | gazetimenty, including definition of boundaries | | | | | | T | | | | | T | | | | T | 1 | 1 | + | omeiai gazette, national law registi y | Evaluate incorporation of project management |
| | Permanent institutional arrangements and/or | r | | | | | | | | | | | | | | | | | | | units into permanent structures, co-manageme |
| 307 | management structure | 8 | 3 * | | | | | | 1 | 1 | | 1 | 1 | | | 1 | 1 - | 1 . | 1 | 1 Structural organization of management | arrangements, decentralisation of management. |
| | | | | | | | | | | | | | | | | | | | | | Track the development and implementation |
| | | | | | | | | | | | | | | | | | | | | | policies and laws which define user rights in a |
| 308 | Change of use rights at a project site | 8 | 3 * | | | | | | 1 | | | | | | | 1 | 1 1 | 1 ' | 1 . | Government policies and law on use rights | area. |
| | Local level or resource user/regulator | | | | | | | | | | | | | | | | | | | | |
| | awareness of the important components of | | | | | | | | | | | | | | | | | | | | |
| 000 | relevant resource management laws and | | | | | | | | _ | | | | | | | Ι, | | | 1. | | |
| 309 | regulations | 3 | 3 ^ | Î | | | - | | 1 | + | + | ╁ | | | - | + 1 | 1 | 1 | | Survey and intervies data | Surveys and interviews |
| | | | | | | | | | | | | | | | | | | | | Full and a full information of the second statement in | Establish agreed acceptable level and calcua |
| 210 | The number of infringements | | * | | | | | | 1 | 1 | 1 | | | | | ١, | 1 - | 1 . | 1. | Evidence of infringements (physical evidence in lfield, community reports, official records) | , |
| 310 | The number of infringements Percentage of arrests (protected area | 2 | | + | H | | + | + | + | + | ╄ | + | | | ╫ | + | + | 1 | I | fileia, community reports, official records) | with stakeholders. |
| | infringement, trade of endangered wildlife, | | | | | | | | | 1 | | | | | | | | | | | |
| | bushmeat) leading to conviction | 5 | 3 | * | | | | | 1 | | | | | | | 1 | 1 . | 1 . | 1 . | Field and official/court reports | Calcualte from field and official/court reports |
| 011 | Change of percent of repeat offenders appearing | | T | T | | | 1 | | | \dagger | | t | | | t | T | T | 1 | + | n iola and emolaroodic roporto | S dissailsom noid and omoral social reports |
| 312 | in court | 8 | 3 * | | | | | | 1 | | | | | | | 1 | 1 - | 1 | 1 | Field and official/court reports | Calcualte from field and official/court reports |
| | Proportion of budget allocated to highest priority | / | | | | | | | | Ī | | | | | 1 | | | | İ | 1 | identify highest priorities and revies budg |
| 313 | Sconservation management areas/functions | 3 | 3 * | | | | | | 1 | 1 | 1 | | 1 | | | _ 1 | 1 - | 1 . | 1 | 1 Budget documents | allocation annually. |
| 314 | Change of sustainability of funding for | r 8 | 3 * | | | | | | 1 | | | | | | | 1 | 1 - | 1 . | 1 | Information on (proposed or actual) management | Review information annually or less often |

| Number of trained staff in relevant agencies or 318 praces (needed vs actual) staffing levels annually. 319 The rate of tumover of staff at a site. 8 | | | | evel | | | | | | | | Ε | The | mati | c ar | ea | | П | | |
|--|-----|---|------|---------|-----|---------|--------|-----|-----|------|------|-----|-----|------|------|-----|------|-----------------|--|--|
| analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and analysisment staff are invoked in, and staffing | | | Soub | oiol. d | org | Indicat | or typ | e | Sui | tahi | litv | W | AG | DL F | FO I | W N | 1C N | Λt | Data sets | L |
| 315-Visibibility and timeliness of release of funds 8 ° 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | rce | E S | - G | D P | SI | R | | T | T | | | П | 1 | Т | 1 | | | Methodology |
| 33 New abulty and invaliness of release of funds at 8 c | | management | | + | t | | | | | | + | | | H | _ | | + | _ | - | Calculate from official records and intensions |
| Change of extent to which field and local management staff are involved in, and alto an interpretation of the budgetay process. 8 | 315 | Availability and timeliness of release of funds | 8 | * | | | | 1 | 1 | 1 | | 1 | | | 1 | 1 | 1 | | | |
| management staff are included in, and 3 touridorstand, the budgetay process and 1 to 1 to 1 to 1 to 1 to 1 to 1 to 1 t | 310 | J | | - | t | | | i | + | ╁ | | Ť | | H | ┪ | ╅ | 7 | 干 | merviews with local management stall. | rosuro. |
| 316 pundestant, the budgetary process The quality and/or quantity of facilities and a 17 punpment 18 punch of facilities and 37 pulpment 18 punch of facilities and 38 punch of trained staff in relevant agencies or 37 pulpment 18 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 318 punch of trained staff in relevant agencies or 320 punch of trained staff in relevant agencies or 320 punch of trained staff in relevant agencies or 320 punch of trained staff in relevant agencies or 320 punch of trained punch of trained staff in relevant agencies or 320 punch of trained punch of trained staff in relevant agencies or 320 punch of trained punch of trained staff in relevant agencies or 320 punch of trained punch of trained staff in relevant agencies or 320 punch of trained punch of trained staff in relevant agencies or 320 punch of trained punch of trained staff in relevant agencies and trained staff in relevant results in the field in relevant agencies of trained staff in relevant agencies and trained staff in relevant results in the field in relevant agencies of trained punch of trained staff in relevant agencies and trained staff in relevant results in the field in relevant agencies of trained staff in relevant agencies and trained staff in relevant results in relevant results in the field in relevant agencies agency in the field in relevant agencies agency in the field in relevant agencies agency in the field in relevant agencies agency in the field in relevant agencies agency in the field in relevant agencies agency in the field in relevant agency in the field in re | | 3 | | | | | | | | | | | | | | | | | | |
| The quality and/or quantity of facilities and so 17 payliment of faired staff in relevant agencies or 318 payliment of faired staff in relevant agencies or 318 press (needed vs. actual) 319 The rate of fundors of staff at a site 8 8 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10 | | ů . | 8 | * | | | | 1 | | | | | | | 1 | 1 | 1 | 1 F | Results of interviews with local management staff. | Interviews with local management staff |
| Number of trained staff in relevant agencies or 318 projection of staff at a site 8 ° 0 ° 0 ° 0 ° 0 ° 0 ° 0 ° 0 ° 0 ° 0 ° | | | | | T | | | | | | | T | | | | | | T | | Identify the equipment and facilities needed, and |
| 318 preas (needed vs actual) 8 | 317 | equipment | 8 | * | | | | 1 | 1 | 1 | | | | | 1 | 1 | 1 | 11 | Management records, inventory | available |
| 319 The rate of tumover of staff at a site 8 ° | | Number of trained staff in relevant agencies or | | | | | | | | | | | | | | | | | | Calculate necessary staffing levels and check |
| The average performance rating of staff at a 32 particular location | 318 | areas (needed vs actual) | 8 | * | | | | 1 | | | | | | | 1 | 1 | 1 | 15 | Staffing levels | actuall staffing levels annually. |
| The average performance rating of staff at a 3 post-cluder focation A verage amount of time (person-days of 32 protected area staff) spent in the field 8 and update ratings every 12 years. 32 protected area staff) spent in the field 8 and update ratings every 12 years. 32 protected area staff) spent in the field 8 and update ratings every 12 years. 33 protected area staff) spent in the field 8 and update ratings every 12 years. 34 protected area staff) spent in the field 8 and update ratings every 12 years. 35 protected area staff) spent in the field 8 and update ratings every 12 years. 36 protected area staff) spent in the field 1 ime 27 protect/government records, community 37 protect/government records, community 37 protect/government records, community 38 part of the field staff and the field staff an | 319 | The rate of turnover of staff at a site | 8 | * | | | | 1 | 1 | 1 | | 1 | | | 1 | 1 | 1 | 15 | Staff records | Calcualte from official records |
| 320 barticular location Average amount of time (person-days of 8 and update ratings every 1-2 years. Average amount of time (person-days of 8 and update ratings every 1-2 years. Average amount of time (person-days of 321 brotech area staff) spent in the field Bistence of representative coordinating or management body which involves key 322 stakeholders 325 Existence of formal conservation agreements Budget allocated to monitoring, or number of staff Status of monitoring information management 326 system Integration of biodiversity monitoring into the 327 outline duties of field staff 327 outline duties of field staff B | | | | | | | | | | | | | | | | | | | | |
| Average amount of time (person-days of 32) protected area staff) spent in the field B | | | ì | | | | | | | | | | | | | | | | | |
| 321 crotected area staff) spent in the field 8 ° | | • | 8 | * | | | | 1 | 1 | 1 | | 1 | | | 1 | 1 | 1 | 1f | fiel patrol records; interview results) | and update ratings every 1-2 years. |
| Existence of representative coordinating or management body which involves key 32 stakeholders 8 ° 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | , , | f | | | | | | | | | | | | | | | | | |
| management body which involves key 322 stakeholders 8 ° 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 321 | | 8 | * | + | | | 1 | 1 | 1 | 1 ' | 1 1 | | 1 | 1 | 1 | 1 | -1 1 | Time sheets and fiel reports | Calcualte field time |
| 322 Stakeholders 8 * | | | | | | | | | | | | | | | | | | ı. | D | |
| 323 Existence of formal conservation agreements 8 ° | | | 0 | * | | | | 1 | | | | | | | 1 | 1 | 1 | | , , | |
| 323 Existence of formal conservation agreements 8 ° | 322 | staket luidet s | O | - | + | | | - | - | + | + | H | | H | ╣ | ╬ | + | -+ | | Examine records to conduct interviews. |
| Budget allocated to monitoring, or number of staff 325 trained in monitoring information management 8 | 323 | Existence of formal conservation agreements | 8 | * | | | | 1 | 1 | 1 | 1 . | 1 | | | 1 | 1 | 1 | | | Examine records to conduct interviews |
| 325 frained in monitoring | | · · · · · · · · · · · · · · · · · · · | : | | t | | | | - | 1 | Ή | Ή | | H | ┪ | - | Ť | _ | | |
| Status of monitoring information management 326 system 8 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | 8 | * | | | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | | 0 0 | |
| Integration of biodiversity monitoring into the 327 routine duties of field staff 8 * 0 0 0 1 1 1 1 1 1 0 0 1 1 1 1 1 1 1 1 | | | t | | | | | | | | | | | | | | | T | | |
| 327 routine duties of field staff Extent and timeliness of implementation of 328 scheduled/planned activities 8 * | 326 | system | 8 | * | | | | 1 | | | | | | 1 | 1 | 1 | 1 | 11 | Management systems | Review of existing systems |
| Extent and timeliness of implementation of 328 scheduled/planned activities 8 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | Integration of biodiversity monitoring into the |) | | | | | | | | | | | | | | | | | Review annual work programms and patro |
| 328 scheduled/planned activities 8 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | 8 | * | | | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1/ | Annual work programs and patrol reports | |
| Recorded evidence of unlawful activity, field reports and aerial surveys, results of threat Calculate form official reports. Carry out resolution on natural resource management Change of proportion of conflicts which are | | | f | | | | | | | | | | | | | | | | | Calculate wether management bodies are meeting |
| 329 Number and nature of threats to site Existence of an agreed procedure for conflict resolution on natural resource management 331 issues Change of proportion of conflicts which are Calculate form official reports. Carry out 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 328 | scheduled/planned activities | 8 | * | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | | | |
| 329 Number and nature of threats to site 8 * | | | | | | | | | | | | | | | | | | | • | |
| Existence of an agreed procedure for conflict resolution on natural resource management 8 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 200 | Nhamban and makeus of the sale to the | | | | | | - 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | | | |
| resolution on natural resource management 8 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | . 8 | | + | | | 1 | - 1 | | 1 | | | Н | 4 | - | + | <u> </u> | review, new development plans. | review. |
| 331 ssues 8 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | | | | | | | | | | | | | | ľ | Draiget ar gavernment records, decumentation of | |
| Change of proportion of conflicts which are Project and government agency records, | | 9 | Ω | * | | | | 1 | 1 | | | | | 1 | 1 | 1 | 1 | | • | |
| | 331 | I. | 0 | + | + | | | - | + | + | + | | | ┝╫ | + | + | + | _ | <u> </u> | |
| L STANICI ENDING LENGTH IN TENDED TO THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF THE PART OF T | 332 | successfully resolved | 8 | * | | | | 1 | | | | | | 1 | 1 | 1 | 1 | | , , , | / Review records, carry out interviews and PRA. |

| | I | | I e | vel | οf | | | | | | | | FΠ | hen | natio | c ar | ea | | | | Page 67 |
|-------|---|-------|-----|-------|----|-----------------|------|------------|----|------|-------|-----|-----|------|-------|------|-----|------|----|---|---|
| | | Sou | | | | Indicat | or t | vne | | | | | | | | | | | | | |
| No. | Indicator/verifier | rce | E E | S. 01 | G | Indicate D P | S I | ypc I F | Si | ıita | ıbilı | ity | ••• | AG I | DL F | FO I | W N | 1C N | Λt | Data sets | Methodology |
| | | | | | | | | | | | | | | | | | | | | Project and government agency records, | |
| 333 | Reduced conflicts over access or use rights | { | 8 * | | Ц | | _ | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | interview results, PRA results. | Review records, carry out interviews and PRA. |
| | Degree of tolerance of wildlife on community | | | | | | | | | | | | | | | | | | | | |
| 334 | and | 8 | 8 * | * | Ш | | 4 | | 1 | 1 | | Ш | | | 1 | 1 | 1 | 1 | 1 | Community and management records. | Review records, carry out interviews and PRA. |
| | Existence of institutional capacity, policy and | | | | | | | | | | | | | | | | | | | | |
| | regulatory framework for the planning, | | | | | | | | | | | | | | | | | | | | |
| | management and conservation of biological | | | | | | | | | | | | | | | | | | | | |
| | diversity | (| 9 * | | Н | | 4 | _ | 1 | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| | International conventions acceeded to | (| 9 * | | Ц | | 4 | | 1 | 1 | | Ш | | | 1 | 1 | 1 | 1 | 1 | | |
| 357 | NGOs programmes and action plans | (| 9 * | | Ц | | | | 1 | ↓ | | | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Endangered species with plans of action (al | | | | | | | | | | | | | | | | | | | | |
| | categories of endangerment, and all types of | | | | Ш | | | | | | | | | | | | | | | | |
| 362 | plans of action) | (| 9 * | | Ц | | | | 1 | 1 | | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| | Existence of procedures for identifying | | | | | | | | | | | | | | | | | | | | |
| | endangered, rare, and threatened species | (| 9 | * | Ш | | | | 1 | 1 | | Ш | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Drive | er indicators of marine and coastal biological dive | rsity | | | | | | | | | | | | | | | | | | | |
| 132 | Net population migration rate | 4 | 4 | | Ш | 1 | | | | 1 | 1 1 | | | 1 | 1 | 1 | 1 | 1 | | | |
| 133 | Total fertility rate | 4 | 4 | | | 1 | | | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | | |
| 135 | Rate of growth of urban population | 4 | 4 | | | 1 | | | | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | | |
| | Share of natural-resource intensive industries in | | | | | | | | | | | | | | | | | | | | |
| 137 | manufacturing value added [?] | 4 | 4 | | | 1 | | | | | | | | 1 | 1 | 1 | 1 | 1 | | | |
| 146 | Population growth in coastal areas | 4 | 4 | | | 1 | | | | 1 | 1 1 | 1 | | | | | | 1 | | | |
| 147 | Discharges of oil into coastal waters | 4 | 4 | | П | 1 | | | | 1 | 1 | | | | | | | 1 | | | |
| | Release of nitrogen and phosphorus to coastal | | | | П | | | | | T | | | | | | | | | | | |
| 148 | waters | 4 | 4 | | | 1 | | | | 1 | 1 1 | | | | | | | 1 | | | |
| 160 | Use of agricultural pesticides | | 4 | | П | 1 | | | | | | | | 1 | | | 1 | 1 | | | |
| | Use of fertilizers | | 4 | | П | 1 | | | | ╁ | | | | 1 | T | | 1 | 1 | | | |
| | Generation of radioactive wastes | / | 1 | | * | 1 | 7 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | | |
| 177 | deficiation of radioactive wastes | | | | H | | 1 | | | 1 | 1 | H | | - | - | -1 | Ť | -1 | | National or local statistical data or survey returns. | Formal census data obtained from releva |
| | Change of total human population inside and | | | | | | | | | | | | | | | | | | | Data from baseline and repeated socio-economic | |
| | around (e.g. within 20 km) conservation areas | 5 | 8 * | | | 1 | | | | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | | surveys. | Monitor every 2-5 years. |
| 207 | Demographic factors (age structure, settlement | | | | Ħ | | T | | | Ť | T | Ħ | | 寸 | 十 | ┪ | ┪ | ┪ | - | National or local statistical data or survey returns. | · · · · · · · · · · · · · · · · · · · |
| | patterns, education levels, etc.) of relevant | | | | | | | | | | | | | | | | | | | Data from baseline and repeated socio-economic | |
| 290 | human population in or around conservation area | | 8 * | | | 1 | | | | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | | surveys. | Monitor every 2-5 years. |
| | | | | | П | | | | | Ť | Ť | П | | | Ť | Ť | Ť | 1 | _ | | Participatory techniques (RRA, PRA, etc.) and |
| | Change of proportion of income derived from | | | | | | | | | | | | | | | | | | | | other socio-economic survey techniques |
| 292 | alternative livelihood activities | { | 8 * | | | 1 | | | | 1 | | | | | 1 | 1 | 1 | 1 | 1 | Survey returns | possibly every two or three years. |

| | | | _evel | | | | | | | | | | The | mat | ic a | rea | | | | |
|----------|--|----------|----------|-----|---------------|----------|----------|---|------|------|------|---|-----|-----|------|------|------|----|---|---|
| No. | Indicator/verifier | Souk | oiol. | org | Indica D P | itor | type | 5 | Suit | abil | litv | W | AG | DL. | FΟ | IW N | лс і | Мt | Data sets | Mothodology |
| NO. | indicator/verifier | rce | <u> </u> | T | ע פ | <u> </u> | <u> </u> | K | T | 1 | T | | | | | | | | | Methodology Participatory techniques (RRA, PRA, etc.) and |
| | Change of resource consumption for household | | | | | | | | | | | | | | | | | | Survey returns, management records, market | |
| 293 | use vs. marketing | 8 | * | | 1 | | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | | surveys | possibly every two or three years. |
| | Change of rate of consumption of biodiversity | | | | | | | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| | resources by different groups (e.g. local | | | | | | | | | | | | | | | | | | Survey returns, management records, market | 3 1 |
| 294 | communities vs. outside interests) | 8 | * | _ | 1 | _ | | | 4 | _ | _ | | | 1 | 1 | 1 | 1 | 1 | surveys | possibly every two or three years. |
| | | | | | | | | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| 205 | Change of number or percent of people | 0 | * | | 1 | | | | 1 | | | | | 1 | 1 | 1 | 1 | | Survey returns, management records, market | |
| 295 | harvesting biodiversity resources | ŏ | + | - | I | - | | | + | + | + | | | | - 1 | - | _ | ı | surveys | possibly every two or three years. |
| | Change of levels of exploitation toward or away | | | | | | | | | | | | | | | | | | Survey returns, management records, market | Participatory techniques (RRA, PRA, etc.) and |
| 296 | from sustainable use | 8 | * | | 1 | | | | 1 | | | | | 1 | 1 | 1 | 1 | | _ ~ ~ | possibly every two or three years. |
| | Tom Sustainable use | | | 1 | | | | | Ť | + | T | | | | | Ť | Ť | | 54110/3 | Participatory techniques (RRA, PRA, etc.) and |
| | Change of number or percent of people engaging | | | | | | | | | | | | | | | | | | Survey returns, management records, market | |
| 297 | in alternative livelihood activities | 8 | * | | 1 | | | | 1 | | | | | | 1 | 1 | 1 | | surveys | possibly every two or three years. |
| | Change of number and/or nature (full time, | | | | | | | | | | | | | | | | | | | |
| | seasonal, etc.) of community members | | | | | | | | | | | | | | | | | | | Examine reports and records every one or two |
| 298 | employed in project and related activities | 8 | * | | 1 | | | | 1 | 1 | | | | | 1 | 1 | 1 | 1 | Project reports, project employment records. | years. |
| | 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 |
| | Implementation of integrated management programmes of coastal areas | 0 | * | | 1 | | | 1 | | | | | | | | | 1 | | | |
| | programmes or coastar areas sure indicators of marine and coastal biological di | ivorcity | | | | | | ! | | | | | | | | | _'! | | | |
| Pies | Percentage of coastal zone with population | | т | Т | | 1 | | | Т | Т | Т | | Г | | | 1 | _ | | | |
| 1 | exceeding 100 inhab./sq. km | 2 | * | | | 1 | | | 1 | 1 | 1 1 | | | | | | 1 | | | |
| <u> </u> | exceeding for initializing, kill | | | | | | | | Ť | ╁ | Τ | | | | | | Ť | | | From national forest inventories, sampling ground |
| | | | | | | | | | | | | | | | | | | | | surveys; cadastral surveys, remote sensing and |
| 7 | Forest area change | 2 | * | | 1 | ı | | | 1 | 1 | 1 | | | 1 | 1 | | 1 | | National authorites and FAO | a combination of these |
| | | | | | | | | | | | | | | | | | | | Remote sensing coverage; agricultural census | |
| 8 | Land use | 2 | * | | 1 | 1 | | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | | data on land uses | FAO recommendation |
| | | | | | | | | | | | | | | | | | | | Most countries collect data on annual catch. | |
| | Ratio between maximum fish sustained yield | | | | | | | | | | | | | | | | | | Calculations are often done by marine resource | |
| | abundance and the actual abundance | 2 | * | + | | | | | 4 | 1 | 1 | | | | Н | 1 | 1 | | insitutes or universities | FAO recommendation |
| 14 | Coral chemistry and growth pattern | 2 | * | + | | | | | 1 | 1 | + | 1 | | | Н | | 1 | | | |
| ٥٦ | Change of presence, location, area, number of | 2 | * * | | | | | | 1 | 1 | 1 | | 4 | 4 | 4 | 1 | 1 | 1 | | |
| | invasive plant or animal species | 2 | · ^ | + | | | | | 1 | 1 | 1 - | | 1 | | | 1 | 1 | | | |
| 56 | Species diversity used for food | 2 | * | | | | | | 1 | 1 | 1 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |

| | ī | | | _ | _ | | | | | - | ш. | | | | | | | Page 69 |
|-------|--|------|----------|-----|----------------|---------|----|----------|--|-----|-----|------|-------|----------|------|----|--|---|
| | | | eve | l c | ot | | | | | E | The | mati | ic ai | ea | | | | |
| 1 | | Souk | oiol. | org | Indicat D P | or type | Sz | iitah | hilit | , W | AG | DL I | FO I | WN | IC N | Иt | Data sets | L |
| | | rce | <u> </u> | 5 (| D P | SIR | Pu | III | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | _ | 7.0 | | | <u> </u> | T | | | Methodology |
| | Species used by local residents | 2 | | * * | 1 | | | 1 1 | | | | 1 | 1 | 1 | 1 | 1 | | |
| 134 | Population density | 4 | | | 1 | | Ľ | 1 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | |
| | | | | | | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| | Proportion of income derived from uncultivated | | | | | | | | | | | | | | | | | other socio-economic survey techniques, |
| 291 | biodiversity resources | 8 | * | | 1 | | Ľ | 1 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | Survey returns | possibly every two or three years. |
| | | | | | | | | | | | | | | | | | | Remote sensing, aerial survey, map overlays, |
| 330 | Rate of encroachment into PAs | Ö | * | | 1 | | Ľ | 1 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | Remote sensing data, field reports, land use data. | GIS should be repeated every two to five years. |
| | Number of large bottom trawling vessels per | | | | | | | | | | | | | | | | | |
| 463 | 1000 sq. km of coastal area | 9 | * | | 1 | | | 1 | | 1 | | | | _ | 1 | | | |
| | Amount and poison chemicals and dynamite |) | | | | | | | | | | | | | | | | |
| 465 | used for reef fishing | 9 | * | _ | 1 | | | \sqcup | _ | | | Ļļ | | _ | 1 | | | |
| | Coastal population without purification treatment | | | | | | | | | | | | | - [| | | | |
| 468 | of sewage | 9 | * | | 1 | | | 1 1 | | 1 | | | | _ | 1 | | | |
| | Number of boats and capacity of the national | | | | | | | | | | | | | | | | | |
| 469 | fishing fleet in the national fishing grounds | 9 | * | | 1 | | Ľ | 1 | | | | | | | 1 | | | |
| | Total boats, canoes operated on island per | | | | | | | | | | | | | | | | | |
| | village | 9 | * | | 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 | | |
| | Heavy metal discharges into marine | à | | | | | | | | | | | | | | | | |
| | 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 | e indicators of marine and coastal biological divers | sity | • | | | | | | | | | | | • | | | | |
| | Limiting factors for key species, e.g. nest holes | | Т | Т | | | | П | Т | | | П | | Т | T | | | |
| 34 | for parrots, fruit bat roosting trees | 2 | * | * | | 1 | | 1 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | Fish family diversity | 2 | * | * | | 1 | | 1 1 | 1 | 1 | | | | 1 | 1 | | | |
| | Relative wilderness index | 2 | * | | | 1 | | | | | | 1 | 1 | Ť | 1 | | | |
| | Percentage of area in strictly protected status | 2 | * | * | | 1 | | 1 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| 70 | Absolute and relative abundance, density, basal | | + | + | | | | | + | 1 | | H | | ╫ | + | _ | | |
| | area, cover, importance value for various | | | | | | | | | | | | | - [| | | | |
| 51 | species (plants) | 2 | | * | | 1 | | 1 1 | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Sex ratio, age distribution and other aspects of | | \top | 1 | | | | \sqcap | 1 | | | H | | 7 | Ť | | | |
| | population structure for sensitive species, | | | | | | | | | | | | | | | | | |
| 52 | keystone species, and other special interest | | | * | | 1 | | 1 1 | | | | 1 | 1 | 1 | 1 | 1 | | |
| | , , , , , , , , , , , , , , , , , , , | | | | | | | _ 1 | | | _ | _ | | | | | | |

| | | | Leve | | | | | | | | | | | Ther | nati | ic a | rea | | | |
|-----|--|-------------|--------------|-----|-----------|----------|-------------|---------|----|------|------|-----|---|------|------|------|------|-----|----|--|
| No. | Indicator/verifier | Sou: rce | oiol. E S | org | Indi D | cat P | orty S I | pe R | Su | ıita | bili | ity | W | AG | DL I | FΟ | IW I | ИС | Mt | Data sets Methodology |
| | species (animals) | | | | | | | | | | | | | | | | | | | The state of the s |
| 53 | Algae index | 2 | | * | | | 1 | | | 1 - | 1 1 | 1 | | | | | 1 | 1 | | |
| | Threatened fish species as a percentage of total | | | | | | | | | | | | | | | | | | | |
| 58 | freshwater fish species known | 2 | | * | | | 1 | | | 1 - | 1 1 | 1 | | | | | 1 | 1 | | |
| | Presence of taxa indicators of environmental | | | | | | | | | | | | | | | | | | | |
| | integrity | 2 | | * | | | 1 | | Ľ | 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 | | Ľ | 1 - | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| 62 | Indigenous species present (by group) | 2 | | * | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| | Number of endemic species per taxonomic | | | | | | | | | | | | | | | | | | | |
| | group | 2 | | * | | | 1 | 4 | | 1 ' | 1 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 |
| | Change of composition of species over time | 2 | | * | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Spatial differences in the number of rare vs | | | | | | | | | | | | | | | | | | | |
| | common species | 2 | | * | | | 1 | + | _ | 1 ' | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| | Spatial differences in the number of restricted vs | | | | | | | | | | | | | | | | | _ | | |
| | wide-range species | 2 | - | ^ | | | 1 | + | | 1 | - | | | -1 | 1 | 1 | -1 | 1 | | |
| | Representativeness of intraspecific variability of endangered and economically important species | 2 | | * | | | 1 | | | 1 . | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | | 2 | + | * | | - | 1 | + | | + | 1 | - | | 1 | 1 | 1 | 1 | 1 | | |
| | Diversity of native fauna Species richness (number, number per unit | | | + | | - | - | + | | + | | | - | - | _ | _ ! | | I | | |
| | area, number per habitat type) | 2 | | * * | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 13 | агеа, питтрег рег навітат туре) | | | + | | - | + | + | | + | | | | - 1 | - 1 | _ ' | - | - 1 | - | For example four quality variables measured as |
| | | | | | | | | | | | | | | | | | | | | percent of baseline, e.g. |
| | | | | | | | | | | | | | | | | | | | | (70%+20%+0%+30%)/4=30% multiplied with |
| | | | | | | | | | | | | | | | | | | | | Sum (percent agro-ecosystem quantity * percent percent ecosystem type of total national area and |
| 130 | Natural capital index framework | 3 | * | | | | 1 | | • | 1 - | 1 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 agro-ecosystem quality) 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 | | |
| | Threatened species as a percent of total native | | T | Ī | | | | | | | 1 | | | | | | | | | |
| 168 | species | 4 | | | | | 1 | | Ľ | 1 - | 1 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| | Absolute and relative abundance, density, basal | | | | | | | | | | | | | | | | | | | |
| | area, cover, importance value for various | | | | | | | | | | | | | | | | | | | |
| | species (plants) | 7 | + | * | | | 1 | + | Ľ |] | 1 1 | 1 | | 1 | 1 | _1 | 1 | 1 | 1 | 1 |
| | Sex ratio, age distribution and other aspects of | | | | | | | | | | | | | | | | | | | |
| | population structure for sensitive species, keystone species, and other special interest | | | | | | | | | | | | | | | | | | | |
| | keystone species, and other special interest species (animals) | 7 | | * | | | 1 | | | | | | | | 1 | 1 | 1 | 1 | | |

| | | | eve | el 0 | f | | | | | | | Εħ | Then | nati | c ar | ea | | | | Page /1 |
|-----|--|------|-----|------|--------|-----|------------|----|------|------|-----|-----|------|------|------|------|------|-------|---|---|
| | | Sauk | .: | ~~~ | Indiaa | tor | type | | | | | ١٨/ | | | | | | | Data coto | |
| No. | Indicator/verifier | rce | E . | s Ğ | D P | S | <u>í F</u> | Si | uita | ıbil | ity | | AG | DL I | -01 | VV N | 1C I | Mt | Data sets | Methodology |
| 227 | Distribution and dispersion of special interets species across the region | 7 | | * | | 1 | | | 1 | | | | | 1 | 1 | 1 | 1 | I | | |
| 228 | Population growth and fluctuation trends of special interest species | 7 | | * | | 1 | | | 1 | 1 - | I | | | 1 | 1 | 1 | 1 | | | |
| | 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 | | | |
| | Trends in habitat components for special interest species (varies by species) | 7 | | * | | 1 | | | | | | | | 1 | 1 | 1 | 1 | | | |
| | 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 | | | * | | 1 | | | 1 | 1 1 | I 1 | | | | | 1 | 1 | | verage sizes/lengths of given species ir atches. 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 | fo | remote sensing data, vegetation maps, national orest cover inventories, coastal zone maps, retland and freshwater inventories | Overlay maps, GIS, Aerial surveys, Grour truthing |
| 336 | Man-made habitat | 10 | | | | 1 | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | fo | emote sensing data, vegetation maps, national orest cover inventories, coastal zone maps, retland and freshwater inventories | Overlay maps, GIS, Aerial surveys, Grour truthing |
| 337 | Native vegetation fragmentation | 10 | | | | 1 | | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 F | and use plans, remote sensing data, surveys, AO data | GIS, overlay maps |
| 339 | Conversion of coastal areas | 10 | | | | 1 | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | | and use plans, remote sensing data, surveys, AO data | GIS, overlay maps |
| 342 | Species richness | 10 | | | | 1 | | | | | | | | 1 | 1 | 1 | 1 | | atural biodiversity data base, surveys, ansects, sampling reports | Monitoring and research programmes, inventorie |
| | Change of abundance and/or distribution of a selected core set of species | 10 | | | | 1 | | | 1 | 1 - | | | | 1 | 1 | 1 | 1 | 1W | /ide area, transect, sample results | Surveys and monitoring programmes depending on the species involved |
| | Threatened species as percentage of total species or certain taxonomic groups | 10 | | | | 1 | | | 1 | 1 1 | | | | 1 | 1 | 1 | 1 | 1 E | ndangered 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 | l 1Ei | ndangered and threatened species data sets | Surveys and monitoring programmes depending on the species involved |

| | | | evel | | | | | | | | | | The | mat | ic a | rea | | | | |
|-----|---|-------------|----------------------|----------|---------------|-----------|----------|---|------|------|------|---|-----|-----|------|-----------------|------|----|---|---|
| No. | Indicator/verifier | Souk rce | oiol. (<u>ES</u> | org G | Indica D P | ator S | type | R | Suit | tabi | lity | W | AG | DL. | FO | IW N | ЛС І | Иt | Data sets | Methodology |
| 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 Morphological analysis, offspring paren |
| 347 | Replacement of indigenous crops | 10 | | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | Allelic diversity, karyotype variants | 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 parer regression, DNA sequencing, electrophoresis karyotypic analysis |
| | Size and distribution of protected areas according to IUCN 1-6 | 9 | * | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Number of endemic, threatened/endangered/vulnerable species by taxonomic group | 9 | * | | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Number of visitors to protected areas | 9 | * | | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | | |
| | 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 Percentage of protected area of different ecosystem types | 9 | * | | | | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Species of communal interest of all indigenous species (percent) | 9 | * | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Endangered species of all indigenous species (percent) | 9 | * | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Alien species of all indigenous species (percent) | 9 | * | | | | 1 | | 1 | | | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | E.coli counts and nutrient levels as percent of basline levels | 9 | * | | | | 1 | | 1 | 1 | 1 | 1 | | | | | 1 | | | |
| | Coastline land cover | 9 | * | | | _ | 1 | | 1 | 1 | 1 | 1 | | | | | 1 | | | |
| | Protected coastal area | 9 | * | _ | | - | | | 1 | 1 | _ | 1 | | | | | 1 | | | |
| | Length of artificial coral reef | 9 | * | \vdash | | | | | 1 | + | + | 1 | | Н | H | | 1 | | | |
| | Polluntants in polar bears | 9 | * | \bot | | l i | \vdash | | 1 | 1 | 1 | 1 | | Н | | $\vdash \vdash$ | 1 | | | |
| | Number of commercial fish populations inside/outside safe biological limits | 0 | * | | | | | | | | | | | | | | 1 | | | |
| | rnside/outside sale biological limits Monitoring of population trends in marine mammals | 9 | * | | | | 1 | | 1 | | 1 | 1 | | | | | 1 | | | |
| | ct indicators of marine and coastal biological dive | rsity | | | | | | | | | | | | | | | • | | | |
| 5 | Quantity of a particular species in fish catches at | 2 | * | | | | 1 | | 1 | 1 | 1 | 1 | | | | 1 | 1 | | | Fisheries Dept. reports, market survey, prio |

| | ı | | | | 4 | | | | | - | | | | | | | Page / |
|-----|---|-------|--------------|----------|-------------------|---------------|----|------|----------|-----|----|------|------|------|------|------|--|
| | | | eve | | | | | | | | EΠ | hem | atic | are | a | | |
| No. | Indicator/verifier | Sou b | oiol. E S | org G | Indicato D P S | r type I F | Si | uita | ıbilı | ity | N | AG E | DL F | O IW | / MC | C Mt | nt Data sets Methodology |
| | specified season | | | | | | | | | П | | | | | | | survey, questionnaires |
| 19 | Shoreline position | 2 | * | | | 1 | | 1 | 1 1 | 1 | | | | | | 1 | |
| | Total area of a particular habitat/vegetation type | 2 | * | 1 | | 1 | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 |
| | Size of largest block of each habitat/vegetation | | | | | | | Ť | | П | | 1 | 1 | Ť | | Ť | |
| 28 | type | 2 | * | | | 1 | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 |
| | Mean nearest distance between blocks of a | ì | | | | | | | | П | | | | | | | |
| 29 | particular habitat type | 2 | * | | | 1 | | 1 | 1 1 | | | 1 | 1 | 1 | 1 | 1 | 1 |
| | Number and distribution of keystone or indicator | | | | | | | | | | | | | | | | |
| | species | 2 | * * | | | 1 | | 1 | 1 1 | Ш | | 1 | 1 | 1 | 1 | 1 | 1 |
| 40 | Number of introduced species and genomes | 2 | * * | | | 1 | | 1 | 1 | Ш | | 1 | 1 | 1 | 1 | 1 | 1 |
| | Quantity of specimens or species of | Î | | | | | | | | | | | | | | | |
| | economic/scientific interest removed from the | ļ | | | | | | | | | | | | | | | |
| 41 | environment | 2 | * * | | | 1 | | + | | Н | | 1 | 1 | 1 | 1 | 1 | 1 |
| | Proportion of protected area to converted/utilized | | | | | | | | | | | | | | | | |
| | area | 2 | * * | * * | | 1 | | 1 | 1 | Н | | _ | 1 | 1 | 1 | 1 | |
| 44 | Erosion/loss of genetic diversity patrimony | | * * | * | | 1 | | + | | Н | | 1 | 1 | 1 | 1 | 1 | 1 |
| 40 | Population growth and fluctuation trends of | | | | | | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | |
| 49 | special interest species | | | | | + + | | + | <u> </u> | Н | | + | + | + | 1 | + | |
| 45 | Number of non-indigenous species present (by taxonomic group) | 2 | * | | | 1 | | 1 | 1 1 | | | 1 | 1 | 1 | 1 | 1 | 1 |
| 03 | Change of number of species (species richness) | | + | | | ++ | | ╫ | 1 | Н | | + | + | + | + | + | |
| 6F | over time (increase/decrease) | 2 | * | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | |
| 0.0 | Species groups: total number vs. threatened | | + | + | | ++ | | + | - | Н | | ╅ | ╈ | ╈ | + | ╁ | |
| 67 | species | 2 | * | | | 1 | | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | |
| | Species with smaller population size vs larger | | | | | | | | | П | | | | Ť | Ť | | |
| 68 | population size | 2 | * | | | 1 | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | |
| | Number of species in taxonomic group | | | | | | | | | П | | | | | | | |
| 77 | threatened with extirpation | 2 | * | * | | 1 | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 |
| | Number of endemic species in taxonomic group | , | | | | | | | | | | | | | | | |
| 78 | threatened with extinction | 2 | * | * | | 1 | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | |
| 79 | Species risk index | 2 | * | * | | 1 | | | | Ш | | 1 | 1 | 1 | 1 | 1 | |
| | Species with stable or increasing populations | | | | | | | | | | | | | | | | |
| 80 | (number or percent) | 2 | * | * | | 1 | | | 1 | Щ | | 1 | 1 | 1 | 1 | 1 | |
| | Species with decreasing populations (number or | | | | | | | | | | | | | | | | |
| | percent) | 2 | * | * | | 1 | | 1 | _ | Ш | | 1 | 1 | 1 | 1 | 1 | |
| 83 | Number of endemic species in protected areas | 2 | * | * | | 1 | | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | |
| | | | | | | | | | | | | | | | | | Remote sensing data (vegetation maps may Manual methods using overlay maps, or G |
| 268 | Change of total area of a particular habitat type | 8 | * | | | 1 | | 1 | 1 | Ш | | 1 | 1 | 1 | 1 | 1 | 1 already exist for baseline) where feasible |

| | | | _evel | | | | | Г | | | | | hen | natio | c ar | ea | | |
|-----|---|--------|-------------|--------|---------------|----------|------|----|----------|------|----------|---|----------|-------|-------|-----|------|---|
| No | Indicator/verifier | Sout | oiol. FS | org | Indica D P | tor t | type | Su | ital | bili | ty | W | AG I | DL F | -O /\ | V M | C Mt | Data sets Methodology |
| | Change of area of largest block of a particular habitat type | 8 | * | | | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | Remote sensing data (vegetation maps may Manual methods using overlay maps, or GIS 1already exist for baseline) where feasible |
| | Change of average size of a particular habitat type | 8 | * | | | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | Remote sensing data (vegetation maps may Manual methods using overlay maps, or GIS 1already exist for baseline) where feasible |
| | Change of mean nearest distance between blocks of a particular habitat type | 8 | * | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | Manual methods using overlay maps, or GIS 1 Remote sensing data or measured in the field where feasible |
| 272 | Change of average width of break in an identified habitat corridor | 8 | * | | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | Manual methods using overlay maps, or GIS 1 Remote sensing data or measured in the field 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 | | * | | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | 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 | f 8 | * | , | | | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | Encounter rate (e.g. sight, sound, sign) along transects. Number of individual at concentrationManagement staff monitor transects (e.g. section points such as colonies or roosts. Management of track) on regular patrols. Regular counts a 1 patrol reports |
| 283 | Change of proportion of particular species in fish catches at specified season | 8 | * | | | | 1 | 1 | 1 | 1 | 1 | | | | | 1 | 1 | Management staff collect information fror 1 Records kept by community community |
| 285 | Range of designated species (either total range or range within monitoring area) | 8 | * | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | Combination of sighting data and transect sign National level staff combine indicator data for a 1 data. |
| 286 | Amount of plant or animal material by species harvested in protected area | 8 | * | | | | 1 | 1 | 1 | 1 | | 1 | | 1 | 1 | 1 | 1 | Amount of resource harvested in a defined area 1 as recorded by the local community. Record keeping by community or sub-group. |
| 287 | Amount of designated resource harvested per Junit effort | 8 | * | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | Community, sub-group of community of Amount of resource harvested per unit effort. |
| 288 | Number of confirmed instances of hunting and/or harvesting of designated species in a given time period | | * | | | | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | Combination of : field evidence and village and Information collected by management patrols 1 market surveys. from villagers or from market traders. |
| | Annual rate of mangrove conversion | 9 | * | | | | 1 | 1 | 1 | | 1 | | | | | | 1 | |
| | Dumping of pollutants to the ocean water basins | 9 | * | \bot | | | 1 | 1 | _1 | | Ц | | _ | _ | 4 | _ | 1 | |
| | Contamination in critical points | 9 | * | \bot | | | 1 | 1 | _1 | 1 | 1 | | _ | _ | 4 | _ | 1 | |
| | Denatured coast | 9 | * | + | | \dashv | 1 | | \vdash | | Н | _ | 4 | _ | + | + | 1 | |
| | Quality of water in the ocean | 9 | * | + | | 4 | 1 | 1 | _1 | 1 | 1 | | _ | _ | 4 | 4 | 1 | |
| | Gleaning or fishing off reef per village | 9 | * | + | | | 1 | 1 | H | | \vdash | + | \dashv | _ | 4 | + | 1 | |
| | Trends in seabird population | 9 | * | + | | \vdash | 1 | 1 | _1 | 1 | 1 | | \dashv | _ | - | - | 1 | |
| | By-catch in fisheries bonse indicators of marine and coastal biological | 9 | * | L | | | 1 | 1 | Щ | | 1 | | _ | | | | 1 | |

| | | | Lev | /el | of | | | | | | | li | ΕПΉ | nema | atic | area | 3 | | | Page /5 |
|-----|---|-----|----------|----------|----|--------|------|-----|-----|-----|------|----------|-----|---------|---------|------|-----|-----|--|--|
| | | Sou | | | | ndicat | or t | vpe | | | | | | | | | | | Data sate | |
| No. | Indicator/verifier | rce | Ε | S | ĞD | ndicat | Si | F | Su | ita | bili | ty | P | AG D | L FC |) IW | MC | Mt | Data sets | Methodology |
| | Average width of break in an identified habitat | | $ \ $ | | | | | | | | | | | | | | | | | |
| | corridor | 2 | * | | | | 4 | | 1 | | Щ | \sqcup | | 1 | 1 | 1 1 | 1 | 1 ' | | |
| | 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 | | ш | | | 1 | 1 1 | 1 ' | 1 ' | | |
| 1 . | Number of threatened species in taxonomic | | | | | | | | | | | | | | | | | | | |
| 84 | groups in ex situcollections | 2 | | * | * | | _ | | 1 1 | 1 | 1 | 1 | | 1 | 1 | 1 1 | 1 ' | 1 | | |
| ٥٦ | Number of threatened species in taxonomic | , | | * | | | | | 1 1 | | | 1 | | 1 | 1 | 1 . | 1. | 1 | | |
| 85 | group with viable ex situ populations | | | ^ | _ | | | | | | Н | - 1 | | + | 1 | 1 | | 1 | | |
| 120 | Environmental protection expenditures as a percent of GDP | 1 | | | | | | | 1 1 | 1 | | 1 | | 1 | 1 | 1 - | 1 . | 1 | | |
| | | 4 | | | | | | | 1 1 | 1 | 1 1 | 1 | | + | + | - | 1 . | 1 | | |
| | Waste water treatment coverage and functioning | 4 | \vdash | \vdash | | | + | + | 1 1 | | 1 | 1 | | + | + | + | 1 . | 1 | | |
| 145 | Density of hydrological networks Data available on maximum sustained yield for | 4 | \vdash | \vdash | | | + | + | | | H | | | + | + | + | 1 | 1 | | |
| 149 | isheries | 4 | | | | | | | 1 1 | 1 | 1 1 | 1 | | | | , | 1 | 1 | | |
| | Decentralized local-level natural resource | 2 | | | | | | | | | | | | | | | | | | |
| | management | 4 | | | | | | | 1 | | | ш | | 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 ' | 1 | | |
| 176 | Existence of national biosafety regulations or quidelines | 4 | | | | | | | 1 1 | | | | | 1 | | | 1 . | 1 | | |
| | Mandated environmental impact assessment | 4 | | | | | | | 1 1 | 1 | 1 | 1 | | | 1 | 1 1 | 1 | 1 | | |
| | Scientists and engineers engaged in research | 1 | | | | | | | | | | | | | 1 | | | | | |
| | 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 | 1 | | |
| 185 | Programmes for national environmental statistics | 4 | | | | | | | 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 |
| | Community cooperation with conservation staff | | | | | | | | | | | | | | | | | | Results of interviews and PRA with communities | , |
| 301 | (such as anti-poaching activities, monitoring) | 8 | * | | | | | | 1 1 | 1 | 1 | 1 | | | | 1 1 | 1 | 1 . | and government agency staff. | Interviews and PRA |
| | | | | | | | | | | | | | | | | | | | Results of interviews and PRA with communities | |
| 302 | Self-monitoring of resource by users | 8 | * | | | | | | 1 1 | 1 | 1 | Щ | | \perp | | 1 1 | 1 | 1 ' | | Interviews and PRA |
| | Establishment of clearly defined boundaries and | | | | | | | | | | | | | | | | | | | Review records, rules and regulations (annuall |
| 303 | membership of resource using group | 8 | | | | | 4 | 4 | 1 1 | | Ш | Щ | | \bot | \perp | 1 1 | 1 | 1 ' | | or less frequently) |
| 304 | Existence of representative coordinating or management body | 8 | * | | | | | | 1 1 | | | 1 | | | | 1 - | 1 . | 1 . | | Annual surveys of communities and conservatio staff, local records, interviews. |
| 551 | | | П | | | | 7 | | | | | | | T | \top | 1 | t | t | 9 | Review of status of exisiting and pendin |
| | Change of the legal and regulatory framework at | | | | | | | | | | | | | | | | | | | legislation and policies, including legislation or |
| | the national level | 8 | * | | | | | | 1 | | | | | | | 1 - | 1 | 1 . | Official gazette, national law registry | protected areas and endangered species |

| | | | evel | | | | | | | E | E TI | hema | atic a | area | ì | | | |
|-----|---|------|----------|----------|-------------------|----------|-----|------|------|----------|------|------|--------|------|-----|-----|--|--|
| No | Indicator/verifier | Soub | oiol. | org | Indicate D P S | or type | Si | uita | bili | tv^{V} | ۷ | AG D | L FO | IW. | МС | Mt | Data sets | Mathadalagy |
| No. | | rce | <u> </u> | <u> </u> | D P : | <u> </u> | ₹ - | 1 | 1 | -5 | + | | 1 | 1 | 1 | 1 | | Methodology |
| 306 | Change of the legal status of an area (e.g. legal gazettment), including definition of boundaries | 8 | * | | | | 1 | | | | | | | 1 1 | 1 - | 1 | 1 Official gazette, national law registry | Review status of boundary demarcation |
| | | | | | | | | | | | | | | | | | | Evaluate incorporation of project managemen |
| | Permanent institutional arrangements and/or | | | | | | | | | | | | | | | | | units into permanent structures, co-managemen |
| 307 | management structure | 8 | * | | | | 1 | 1 | 1 | 1 | | | | 1 1 | 1 | 1 | 1 Structural organization of management | arrangements, decentralisation of management. |
| | | | | | | | | | | | | | | | | | | Track the development and implementation o |
| | | | | | | | | | | | | | | | | | | policies and laws which define user rights in ar |
| 308 | Change of use rights at a project site | 8 | * | | | | 1 | | | | | _ | | 1 1 | 1 | 1 | 1 Government policies and law on use rights | area. |
| | Local level or resource user/regulator | | | | | | | | | | | | | | | | | |
| | awareness of the important components of | | | | | | | | | | | | | | | | | |
| | relevant resource management laws and | 8 | * * | | | | 1 | | | | | | | 1 1 | , | | 1 Cum vary and intension data | Company and intensions |
| 309 | regulations | ŏ | + | + | | ++ | | + | | | + | - | + | | | ╁ | 1Survey and intervies data | Surveys and interviews Establish agreed acceptable level and calcualte |
| | | | | | | | | | | | | | | | | | Evidence of infringements (physical evidence in | |
| 210 | The number of infringements | Q | * | | | | 1 | 1 . | 1 | | | | | 1 1 | | 1 | 1 field, community reports, official records) | the difference annually, or at an interval agreed with stakeholders. |
| 310 | Percentage of arrests (protected area | O | | + | | + | | ╁ | 1 | | H | - | ╁ | | | ╁ | fileia, community reports, official records) | With Stake Holders. |
| | 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 |
| | Change of percent of repeat offenders appearing | 1 | | | | + | | | | | | + | | 1 | | | il lou una omolarecart reports | Calculate from field and official court reports |
| | in court | 8 | * | | | | 1 | | | | | | | 1 1 | , | 1 | Field and official/court reports | Calcualte from field and official/court reports |
| | Proportion of budget allocated to highest priority | | | | | | | | | | | | | | | | | identify highest priorities and revies budge |
| | conservation management areas/functions | 8 | * | | | | 1 | 1 | 1 | 1 | | | - | 1 1 | - | 1 | 1 Budget documents | allocation annually. |
| | Change of sustainability of funding for | | | | | | | | | | | | | | | | Information on (proposed or actual) management | |
| 314 | management | 8 | * | | | | 1 | | | | | | - | 1 1 | 1 | 1 | 1 funding sources. | Review information annually or less often |
| | | | | | | | | | | | | | | | | | Annual budget. Local financial records. Results of | Calculate from official records and interview |
| 315 | Availability and timeliness of release of funds | 8 | * | | | | 1 | 1 | 1 | 1 | | | - | 1 1 | 1 | 1 | 1 interviews with local management staff. | results. |
| | Change of extent to which field and local | l | | | | | | | | | | | | | | | | |
| | management staff are involved in, and | d | | | | | | | | | | | | | | | | |
| | understand, the budgetary process | 8 | * | | | | 1 | | | | | | | 1 1 | 1 | 1 | 1 Results of interviews with local management staff. | - |
| | The quality and/or quantity of facilities and | d | | | | | 1 | | | | | | | 1 1 | | | | Identify the equipment and facilities needed, and |
| | equipment | 8 | _ | - | | + | - | + | - | | | + | + | 1 | | _ | 1 Management records, inventory | available |
| | Number of trained staff in relevant agencies or | C | * | | | | 1 | | 1 | | | | | 1 . | | | 1 Chaffing lavala | Calculate necessary staffing levels and check |
| | areas (needed vs actual) | 8 | * | | | | 1 | 1 . | | 1 | | - | + | 1 1 | | - | 1Staffing levels | actuall staffing levels annually. |
| 319 | The rate of turnover of staff at a site | 8 | + | + | | + | | 1 | 1 | | + | + | + | 1 1 | | ╀ | 1 Staff records | Calcualte from official records |
| | The guerous perfermence relies of staff of | | | | | | | | | | | | | | | | Results of individual performance evaluations | |
| 220 | The average performance rating of staff at a | 0 | * | | | | 1 | 1 . | 1 | 1 | | | | 1 1 | | | | Develop and use a performance rating system |
| 320 | particular location | 8 | | 1 | | | ı | 1 | 1 | l | | | | 1 1 | 1 | l L | 1 fiel patrol records; interview results) | and update ratings every 1-2 years. |

| | | | Lev | el e | of | | | | | | | F | The | mati | ic a | rea | | 一 | | Page // |
|-----|--|-----|-----|--------|---------------|------|--------|---|-------|------|-----|-----|-----|------|------|------|------|----|--|---|
| | | Sou | | | | cato | r tvpe | , | | | | | | | | | | | 5.4.4 | |
| | Indicator/verifier | rce | Ε | S | g Indi G D | P S | l | R | Suite | abil | ity | | AG | DL | FO . | IW N | 1C N | Лt | Data sets | Methodology |
| | 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 |
| | Existence of representative coordinating or management body which involves key stakeholders | | * | | | | Ш | 1 | | | | | | | 1 | 1 | 1 | 1i | | Examine records to conduct interviews. |
| 323 | Existence of formal conservation agreements | 8 | * | | | | | 1 | 1 | 1 | 1 . | 1 | | | 1 | 1 | 1 | | Project/government records, community nterviews | Examine records to conduct interviews. |
| | Budget allocated to monitoring, or number of staff trained in monitoring | 8 | * | | | | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | | Results of review of budget, staffing, management systems | Review budget, staffing and managemen systems annually or less frequently. |
| 326 | Status of monitoring information management system | 8 | * | | | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | | 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 | | Review annual work programms and patr reports. |
| 328 | Extent and timeliness of implementation of scheduled/planned activities | 8 | * | | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | | | Calculate wether management bodies are meetin agreed targets. |
| 329 | Number and nature of threats to site | 8 | * | | | | | 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. | |
| | Existence of an agreed procedure for conflict resolution on natural resource management issues | | * | | | | | 1 | 1 | | | | | 1 | 1 | 1 | 1 | | Project or government records, documentation of raditional resource management regime | Review records and documents, interviews. |
| 332 | Change of proportion of conflicts which are successfully resolved | 8 | * | | | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1i | Project and government agency records, nterview results, PRA results. | Review records, carry out interviews and PRA |
| | Reduced conflicts over access or use rights Degree of tolerance of wildlife on community | 8 | * | * | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1i | | Review records, carry out interviews and PRA |
| | land Existence of institutional capacity, policy and regulatory framework for the planning, management and conservation of biological diversity | | * | | | | | 1 | 1 | 1 | 1 . | 1 | | 1 | 1 | 1 | 1 | 1 | Community and management records. | Review records, carry out interviews and PRA |
| | International conventions acceeded to | 9 | * | \Box | | | | 1 | 1 | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | NGOs programmes and action plans Endangered species with plans of action (all categories of endangerment, and all types of plans of action) | | * | | | | | 1 | 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 | | |

| | | L | evel | of | | | | | | Ε | The | natio | c are | a | | | |
|-----|--|------|--|---------|----------|--------|----------|------|-------|---|----------|----------|-------|-------|-------------|---|---|
| | | Soub | iol. o | rg | Indicato | r type | Sui | itah | ilit. | W | AG | DL F | -O IM | / 1/1 | ∩ Mt | Data sets | |
| No. | Indicator/verifier | rce | E S | G | D P S | l R | Sui | uuv | шу | | 710 | DLI | 0 11 | 1010 | J IVIL | 24.4 50.5 | Methodology |
| 475 | Implementation of integrated management | t | . | Ш | | | | | | | | | | | | | |
| | programmes of coastal areas | 9 | <u>^ </u> | Ш | 1 | |] | | | | | | | | 1 | | |
| | er indicators of mountain biological diversity | | | П | | | | | | | _ | Т | Т | Т | | T T | |
| 157 | Population change of mountain areas | 4 | - | Н | 1 | | 1 | 1 | 1 | 1 | | | | + | 4 | 1 | |
| | | | | Ш | | | | | | | | | | | | National or local statistical data or survey returns. | |
| 200 | Change of total human population inside and | | * | Ш | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | Data from baseline and repeated socio-economic | |
| 289 | around (e.g. within 20 km) conservation areas | ŏ | - | Н | ' | | + 1 | + | + | I | | + | + | + | ╫ | | Monitor every 2-5 years. |
| | Demographic factors (age structure, settlement patterns, education levels, etc.) of relevant | | | Ш | | | | | | | | | | | | National or local statistical data or survey returns. Data from baseline and repeated socio-economic | |
| 200 | human population in or around conservation area | | * | Ш | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | · | Monitor every 2-5 years. |
| 270 | numan population in or around conservation area | . 0 | - | Н | ' | | <u>'</u> | + | + | 1 | | - | + | + | ╫ | | Participatory techniques (RRA, PRA, etc.) and |
| | Change of proportion of income derived from | | | Ш | | | | | | | | | | | | | other socio-economic survey techniques, |
| 292 | Palternative livelihood activities | 8 | * | Ш | 1 | | 1 | | | | | 1 | 1 | 1 | 1 | | possibly every two or three years. |
| | | | | П | | | | | | | | | | Ť | Ť | | Participatory techniques (RRA, PRA, etc.) and |
| | Change of resource consumption for household | | | Ш | | | | | | | | | | | | Survey returns, management records, market | |
| 293 | Suse vs. marketing | 8 | * | Ш | 1 | | 1 | 1 | | | | 1 | 1 | 1 | 1 | , o | possibly every two or three years. |
| | Change of rate of consumption of biodiversity | | | Ш | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| | resources by different groups (e.g. local | | | Ш | | | | | | | | | | | | Survey returns, management records, market | other socio-economic survey techniques, |
| 294 | communities vs. outside interests) | 8 | * | Ш | 1 | | | | | | | 1 | 1 | 1 | 1 | 1surveys | possibly every two or three years. |
| | | | | Ш | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| | Change of number or percent of people | * | | Ш | | | | | | | | | | | | Survey returns, management records, market | |
| 295 | harvesting biodiversity resources | 8 | * | Ш | 1 | | 1 | | _ | | | 1 | 1 | 1 | 1 | | possibly every two or three years. |
| | | | | Ш | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| | Change of levels of exploitation toward or away | ′ | | Ш | | | | | | | | | | | | Survey returns, management records, market | , |
| 296 | from sustainable use | 8 | * | Н | 1 | | 1 | _ | + | | | 1 | 1 | 1 | 1 | i ' | possibly every two or three years. |
| | | | | Ш | | | | | | | | | | | | | Participatory techniques (RRA, PRA, etc.) and |
| 00 | Change of number or percent of people engaging | | | Ш | 4 | | | | | | | | 1 | 1 | 4 | Survey returns, management records, market | * |
| 29. | in alternative livelihood activities | 8 | _ | Н | - | | + | + | + | | | + | + | + | ╫ | 1surveys | possibly every two or three years. |
| | Change of number and/or nature (full time, seasonal, etc.) of community members | | | | | | | | | | | | | | | | Evamino roporte and rocorde overy one or two |
| ാവ | seasonal, etc.) of community members Bemployed in project and related activities | 0 | * | $\ \ $ | 1 | | | 1 | | | | | 1 | 1 | 1 | | Examine reports and records every one or two |
| 290 | change of level of understanding of biodiversity | O | + | H | | | + | + | + | H | | \dashv | + | 1 | + | пртојесттерона, ргојест етприоутнени тесогов. — <u>Г</u> | years. |
| 37/ | change of level of understanding of blodiversity concepts and conservation objectives | ρ | * | | 1 | | | | | | | | 1 | 1 | 1 | 1 Results of structured interviews/guestionnaires | Structured interviews and/σ questionnaires |
| _ | sure indicators of mountain biological diversity | U | | | | | | | | | | | -'1 | 1 | _ | in course of an actured into viewarquestion mailes | or actual or months and a questionilation |
| | Frozen ground activity | 2 | * | П | 1 | | 1 | T | 1 | | 1 | T | T | T | T | 1 | |
| | Size of glacier area | 2 | * | H | 1 | | 1 | 1 | 1 | 1 | <u> </u> | \dashv | + | + | + | 1 | |
| | Ground water level | 2 | * | H | 1 | | 1 | 1 | 1 | Ť | 1 | 1 | 1 | + | + | 1 | |
| 10 | porounu water iever | | | Ш | I | | I | | _! | | l. | l I | I | | | II . | |

| | | | | | | الم | | | | | | | - 1 | r l- | F1. | | _ | | | _ | | Page /9 |
|--|-----|---|-----|-------|------------|---------|---------------|----------|-------------|-------|------|----------|----------|------|------|-------|------|----|------|----|--|---|
| 17 Sans achely 2 | | | C | | | | | | | | | | | | hen | natio | c ar | ea | | | | |
| 17 Sans achely 2 | No. | Indicator/verifier | rce | i bio |)I. 0 S | rg G | Indica D P | tor S | type I I | S_i | uita | bil | ity | W | AG I | DL F | -O I | WΛ | 1C N | Λt | Data sets | Methodology |
| 21 Suit and sediment erosion Streamflow: velocity, volume per time atc. 2 | 17 | Karst activity | 2 | 2 * | | П | 1 | | | | 1 | 1 | | | 1 | 1 | 1 | 1 | | 1 | | |
| 21 Suit and sediment erosion Streamflow: velocity, volume per time atc. 2 | 20 | Slope failure (landslides) | 2 | 2 * | | П | 1 | | | | 1 | 1 1 | | | 1 | | 1 | | | 1 | | |
| Streamflow: velocity, volume per time etc. 2 2 specify seasonality. Volumic unrest: area newly covered by 2 shared area newly covered by 2 shared area newly covered by 3 shared | | | 2 | 2 * | | П | 1 | | | | 1 | 1 | | | 1 | 1 | 1 | | | 1 | | |
| 28-Security seasonally volument of seasonally covered by 24 or 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | | П | | | | | | | | | | | | | | | | |
| Molanic unrost: area nowly overed by 2 dispersion of the control o | 23 | | 2 | 2 * | | | 1 | | | | 1 | 1 1 | | | 1 | | 1 | 1 | | 1 | | |
| Change of presence, location, area, number of 38 invasive plant or animal species 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | 1 | | | П | | | | | | | | | | | | | | | | |
| 36/Per capta wood consumption 48/Percentage of area in sticity protected status 56/Percentage of area in sticity protected status 57/Percentage of area in sticity protected status 58/Percentage of area in sticity protected status 58/Percentages of area in sticity prote | 26 | lava;area newly covered by ashes | 2 | 2 * | | | 1 | | | | 1 | 1 1 | 1 | | 1 | | 1 | | | 1 | | |
| Sepecies used by local residents 8 Species used by local residents 2 | | Change of presence, location, area, number of | | | | | | | | | | | | | | | | | | | | |
| 86 Species used by local residents 2 | 35 | invasive plant or animal species | 2 | 2 * | * | | 1 | | | | 1 | 1 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Proportion of income derived from uncultivated 8 | 56 | Species diversity used for food | 2 | 2 | * | | 1 | | | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Proportion of income derived from uncultivated 29 bloodwerstly resources 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 86 | Species used by local residents | 2 | 2 | * | * | 1 | | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | | |
| 291 biodiversity resources | | | | | | | | | | | | | | | | | | | | | | Participatory echniques (RRA, PRA, etc.) and |
| Remote sensing, aerial survey, map overlays 330 Rate of encroachment into PAs 8 ° 1 ° 1 ° 1 ° 1 ° 1 ° 1 ° 1 ° 1 ° 1 ° | | | | | | | | | | | | | | | | | | | | | | other socio-economic survey techniques |
| 330Rate of encroachment into PAs 8 | 291 | biodiversity resources | 8 | 3 * | | Ш | 1 | | | | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | Survey returns | |
| 368 Per capita wood consumption 9 | | | | | | | | | | | | | | | | | | | | | | |
| AsβAmount of animal waste, NH3 emissions | | | { | 3 * | | Ш | 1 | | | | 1 | 1 1 | | | | 1 | 1 | 1 | 1 | 1 | Remote sensing data, field reports, land use data. | GIS should be repeated every two to five years. |
| 487 Trade records * * 1 1 1 1 1 1 1 1 | 368 | Per capita wood consumption | - | 9 * | | Ш | 1 | | | | | | | | 1 | 1 | 1 | | | 1 | | |
| State indicators of mountain biological diversity 22 Soil quality 2 | | | | * | | Ш | 1 | | | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | | 1 | | NH3 |
| 2 | 487 | Trade records | * | | | * | 1 | | | | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| Limiting factors for key species, e.g. nest holes 34 for parrols, fruit bat roosting trees 2 * * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | | | | | | | | | | | | | | | | | | |
| 34 for parrots, fruit bat roosting trees 2 * * 1 | 22 | Soil quality | 2 | 2 * | | | | 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 1 1 1 1 1 1 1 | | | | | | | | | | | | | | | | | | | | | | |
| Absolute and relative abundance, density, basal area, cover, importance value for various 51 species (plants) Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest 52 species (animals) 62 Indigenous species present (by group) Number of endemic species per taxonomic 64group Species richness (number, number per unit 75 area, number per habitat type) 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 34 | for parrots, fruit bat roosting trees | 2 | 2 * | * | Ш | | 1 | | | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| area, cover, importance value for various 51 species (plants) Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest 52 species (animals) 62 Indigenous species present (by group) Vumber of endemic species per taxonomic 64 group Species richness (number, number per unit 75 area, number per habitat type) 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | 2 | 2 * | * | Ш | | 1 | | | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest 52 species (animals) 62 Indigenous species present (by group) Number of endemic species per taxonomic 64 group Species richness (number, number per unit 75 area, number per habitat type) * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | 3 | | | | | | | | | | | | | | | | | | | | |
| Sex ratio, age distribution and other aspects of population structure for sensitive species, keystone species, and other special interest 52 species (animals) 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | 5 | | | | | | | | | | | | | | | | | | | |
| population structure for sensitive species, keystone species, and other special interest 52 species (animals) 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | 2 | 2 | * | Ш | | 1 | | | 1 | 1 | | | | 1 | 1 | 1 | 1 | 1 | | |
| keystone species, and other special interest 52species (animals) 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | | | | | | | | | | | | | | | | | | | | |
| 52 species (animals) 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | r · | | | | | | | | | | | | | | | | | | | | |
| 62 Indigenous species present (by group) 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | F.2 | | į | | * | | | 1 | | | 1 | | | | | 1 | 1 | 1 | 1 | 1 | | |
| Number of endemic species per taxonomic 64group 2 * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | 4 | 2 | * | Н | | 1 | | | + | 1 | | - | 1 | 1 | 1 | 1 | 1 | 1 | | |
| 64group 2 * 1 1 1 1 1 1 1 1 1 1 1 1 5 5 pecies richness (number, number per unit 75area, number per habitat type) 2 * * 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 02 | | | | \vdash | Н | | | + | | - | \vdash | \vdash | | + | + | + | + | + | _ | | |
| Species richness (number, number per unit 75area, number per habitat type) 2 * * 1 1 1 1 1 1 1 1 | 61 | | , | 2 | * | | | 1 | | | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| 75area, number per habitat type) 2 * * 1 1 1 1 1 1 1 1 1 1 1 1 | 04 | 9 1 | | _ | \vdash | H | | | H | | + | | H | | ╅ | + | + | -1 | -1 | _ | | |
| | 75 | | 2 | 2 | * | * | | 1 | | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | | * | 1 | 2 * | | H | | 1 | | | 1 | 1 1 | 1 | + | 寸 | 1 | 1 | 1 | 1 | 1 | Sum (nercent agro-ecosystem quantity * percent | For example four quality variables measured as |

| | | L | evel | of | : | | | | | | Ε | The | emat | ic a | rea | | |
|-----|---|------|----------|----------|-----------------|-------|-----|-----|-----|-------|---|-----|------|------|------|------|--|
| N. | | Soub | iol. o | org | Indicate D P | or ty | /pe | Sui | tab | ilit\ | W | AC | G DL | FΟ | IW I | лС М | nt Data sets |
| No. | Indicator/verifier | rce | <u> </u> | <u> </u> | D P | 5 1 | R | | | | | | | | | | Methodology 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 |
| | Welfare of mountain populations Absolute and relative abundance, density, basal area, cover, importance value for various species (plants) | | * | | | 1 | | 1 | 1 | 1 | 1 | | 1 1 | 1 | 1 | 1 | 1 |
| | Difference between largest/longest of a given fish species in fish catch and largest/longest recorded size for species | | * | | | 1 | | 1 | 1 | 1 | 1 | | | | 1 | 1 | Average sizes/lengths of given species in Some community members paid to collect data, 1 catches. Maximum sizes from literature. or fish marketing staff collect data. |
| 335 | Self-regenerating habitat | 10 | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, Overlay maps, GIS, Aerial surveys, Ground wetland and freshwater inventories truthing |
| 336 | Man-made habitat | 10 | | | | 1 | | 1 | 1 | | | | 1 | 1 | 1 | 1 | Remote sensing data, vegetation maps, national forest cover inventories, coastal zone maps, Overlay maps, GIS, Aerial surveys, Ground wetland and freshwater inventories truthing |
| 337 | Native vegetation fragmentation | 10 | | | | 1 | | 1 | 1 | | | _ | 1 1 | 1 | 1 | 1 | Land use plans, remote sensing data, surveys, 1FAO data GIS, overlay maps |
| 339 | Conversion of coastal areas | 10 | | | | 1 | | 1 | 1 | | | | 1 | 1 | 1 | 1 | Land use plans, remote sensing data, surveys, 1FAO data GIS, overlay maps |
| 340 | Erosion | 10 | | | | 1 | | 1 | 1 | | | | 1 1 | 1 | | | Land use plans, remote sensing data, surveys, 1FAO data GIS, overlay maps |
| 342 | Species richness | 10 | | | | 1 | | Ш | | | | | 1 | 1 | 1 | 1 | Natural biodiversity data base, surveys, 1 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 | 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 | Surveys and monitoring programmes depending on the species involved |
| 345 | Percent endemic species threatened | 10 | | | | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | _1 | 1 | 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 | Surveys and monitoring programmes depending on the species involved |
| 347 | Replacement of indigenous crops | 10 | | | | 1 | | | | | | | 1 | 1 | 1 | 1 | Morphological analysis, offspring parent 1 Allelic diversity, karyotype variants regression, DNA sequencing, electrophoresis, |

| | | | | | | | | | | | | | | | | | | | | Page 81 |
|------|--|------|------------|-----|---------------|-----|----------|-----|---------|-----------|-----|---|------|------|------|---------|------|-----|---|--|
| | | | eve | | | | | | | | | | hen | | | | | | | |
| | | Soub | iol. | org | Indica D P | tor | type | C | • • • • | . 1. : 1: | ٠ | N | 10 | חו ב | | 1/ 1/ 1 | | Λŧ | Data sets | |
| No. | Indicator/verifier | rce | <u>E</u> S | G | D P | S | <u> </u> | S D | иша | wiii | uy | | AU I | UL I | 0 11 | V IVI | C IV | /IL | Data 3013 | Methodology |
| | | | | | | | | | | | | | | | | | | | | karyotypic analysis |
| | | | | | | | | | | | | | | | | | | | | Morphological analysis, offspring parer |
| | Replacement of land races with few imported | | | | | | | | | | Ш | | | | | | | | | regression, DNA sequencing, electrophoresis |
| 348 | ones | 10 | | | | 1 | | | | | Ш | | | 1 | 1 | 1 | 1 | 1 | Allelic diversity, karyotype variants | karyotypic analysis |
| | Size and distribution of protected areas | | | | | | | | | | | | | | | | | | | |
| 350 | according to IUCN 1-6 | 9 | * | | | 1 | | | | | Ш | | | 1 | 1 | 1 | 1 | 1 | | |
| | Number of endemic, | | | | | | | | | | П | | | | | | | | | |
| | threatened/endangered/vulnerable species by | | | | | | | | | | Ш | | | | | | | | | |
| 352 | 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 | | |
| | Number of threatened mammal, bird, fish, and | | | | | | | | | | П | | | | | | | | | |
| 354 | reptile species | 9 | * | | | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Number of endangered mammal, bird, fish, and | | | | | | | | | | П | | | | | Ī | T | | | |
| | reptile species | | * | | | 1 | | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Percentage of protected area of different | | | | | | | | | | П | | | | | | | | | |
| 358 | ecosystem types | 9 | * | | | 1 | | | 1 | 1 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | | |
| | Species of communal interest of all indigenous | | | | | | | | | | | | | | | | | | | |
| | species (percent) | | * | | | 1 | | | | | | | | 1 | 1 | 1 | 1 | 1 | | |
| | Endangered species of all indigenous species | | | | | | | | | | | | | | | | | | | |
| 360 | (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 | | |
| Impa | act indicators of mountain biological diversity | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | Standard canopy cover methods, possibly done |
| | | | | | | | | | | | Ш | | | | | | | | Canopy cover in percent at the upper canopy | seasonally, or at least annually in the sam |
| 4 | Crown cover (%) | 2 | * | | | | 1 | | 1 | 1 1 | | | | 1 | 1 | | | 1 | level | 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 | | |
| | Size of largest block of each habitat/vegetation | | | | | | | | | | | | | | | | | | | |
| | type | 2 | * | | | | 1 | | 1 | 1 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Mean nearest distance between blocks of a | | | | | | | | | | П | | | | | Ī | Ī | | | |
| 29 | particular habitat type | 2 | * | | | | 1 | | 1 | 1 1 | L l | | _1 | 1 | 1 | 1 | 1 | 1 | | |
| | Number and distribution of keystone or indicator | | | | | | | | | | П | | | | | | | | | |
| | species | | * * | • | | | 1 | | 1 | 1_1 | Ш | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| 39 | Livestock levels per sq. km | 2 | * | | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 1 | Ī | Ī | 1 | | |
| | Number of introduced species and genomes | 2 | * * | | | | 1 | | 1 | 1 | П | | 1 | 1 | 1 | 1 | 1 | 1 | | |
| | Quantity of specimens or species of | | | T | | | | | | | П | | | 丁 | | T | T | | | |
| | economic/scientific interest removed from the | | | | | | | | | | Н | | | | | | | | | |
| 41 | environment | 2 | * * | t | | | 1 | | | | | | 1 | 1 | 1 | 1 | 1 | 1 | | |

| | | | Level | | | | | | | | E | Th | ema | tic a | area | | | | |
|-----|--|-----|----------|-----|----------|----------|--|----|------|-------|------|------------|------|-------|------|----|----|---|---|
| No | Indicator/verifier | Sou | biol. | orç | Indicate | tort | ype | Su | ital | bilii | tv M | / A | G DI | L FO | IW I | МС | Mt | Data sets | Mathadalagy |
| | Proportion of protected area to converted/utilized | ice | <u> </u> | T | ע פ | <u>ъ</u> | <u> </u> | | | 1 | - | Н | Т | T | Π | l | 1 | | Methodology |
| | 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 | 1 | | |
| | Population growth and fluctuation trends of special interest species | 2 | * * | | | | 1 | 1 | 1 | | | | 1 | 1 - | 1 1 | 1 | - | | |
| | Ratio between exotic species plantation area and native species in plantation area | 2 | * | | | | 1 | 1 | 1 | 1 | 1 | | | 1 - | 1 | | , | | |
| | Number of non-indigenous species present (by taxonomic group) | 2 | * | | | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 - | 1 1 | 1 | - | | |
| | Number of species in taxonomic group threatened with extirpation | 2 | * | : * | | | 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 | _ | 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 | | Remote sensing data (vegetation maps may already exist for baseline) | Manual methods using overlay maps, or GIS where feasible |
| | 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 | - | Remote sensing data or measured in the field | Manual methods using overlay maps, or GIS where feasible |
| | 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 |
| | Change of number or total area of protected areas | 8 | * | | | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 - | 1 1 | 1 | | Spatial plans | GIS or overlay maps |
| | Change of total area of land uses compatible with biodiversity conservation in the monitoring area | | * | | | | 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 | | | (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 | | , | transects | Long-term (possibly every two to five years) survey of sites, and/or fixed point photography |
| | Change of vegetation along watercourses | 8 | * | | | | 1 | 1 | 1 | | | | | | 1 | | , | Area of riparian vegetation type, boudary of riparian vegetation, etc. | Remote sensing or transect, quadrat survey |
| | Change of number of keystone or indicator species | 8 | * | | | | 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 | | _ | Numbers, or presence/absence depends on the factors involved | Transects, quadrats, general observations |

| | | | | | | | | | | | | | | | | | | | | Page 83 |
|------|--|-----|------|--------|----|----------|------------|-----|-----|-----|------|-----|------|--------------|-------|--------|---------|--------|--|---|
| | | | | vel | | | | | | | | E | E TH | nema | atic | area | a | | | |
| | | Sou | Jbio | ol. oı | rg | Indicate | or ty | ype | [. | | .,. | , V | ٧ | 4 <i>G D</i> | N FC | 2 /// | 1 1 1 1 | ` A A+ | Data sets | |
| | Indicator/verifier | rc | e E | S | G | D P | <u>S I</u> | R | Sui | tat | ulli | ty | | 1G D | IL FC | יווע ל | IVIC | , IVII | | Methodology |
| | Change of presence, location, area, number of | | | | | | | | ш | | | | | | | | | | Survey, transect or quadrat results, patrol reports, | |
| 280 | invasive plant or animal species | | 8 * | | Ш | | | 1 | 1 | 1 | | | | | | | | | reports from community members | Transects, quadrats or interviews |
| | Changes in frequency of events such as | 3 | | | | | | | ш | | | | | | | | | | | Incorporate into patrol reporting. Carry out specific |
| 281 | landslips | | 8 * | | | | | 1 | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | , | Patrol reports, aerial surveys, remote sensing | surveys for identified events. |
| | | | | | | | | | | | | | | | | | | | Encounter rate (e.g. sight, sound, sign) along | |
| | | | | | | | | | ш | | | | | | | | | | transects. Number of individual at concentration | Management staff monitor transects (e.g. sections |
| ĺ | Abundance (number per taxonomic group) o | f | | | | | | | ш | | | | | | | | | | points such as colonies or roosts. Management | of track) on regular patrols. Regular counts a |
| 282 | key animal species | | 8 | * | Ш | | | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 1 | patrol reports | concetnration points. |
| l | Change of proportion of particular species in fish | | | | | | | | ш | | | | | | | | | | | Management staff collect information from |
| 283 | catches at specified season | | 8 | * | Ш | | | 1 | 1 | 1 | 1 | 1 | | | | | 1 | 1 1 | Records kept by community | community |
| l | Range of designated species (either total range | | | | | | | | ш | | | | | | | | | | Combination of sighting data and transect sign | National level staff combine indicator data for al |
| 285 | or range within monitoring area) | | 8 | * | | | | 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 1 | data. | relevant areas. |
| | Amount of plant or animal material by species | | | | | | | | ш | | | | | | | | | | Amount of resource harvested in a defined area | |
| 286 | harvested in protected area | | 8 | * | | | | 1 | 1 | 1 | 1 | | 1 | | 1 | 1 | 1 | 1 1 | as recorded by the local community. | Record keeping by community or sub-group. |
| | Amount of designated resource harvested per | r | | | | | | | ш | | | | | | | | | | | Community, sub-group of community o |
| 287 | unit effort | | 8 | * | Ц | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | 1 1 | Amount of resource harvested per unit effort. | nominated individuals keep records. |
| | Number of confirmed instances of hunting and/or | | | | | | | | ш | | | | | | | | | | | |
| | harvesting of designated species in a given time | | | | | | | | ш | | | | | | | | | | ~ | Information collected by management patrols |
| | period | | 8 | * | Ш | | | 1 | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 1 | market surveys. | from villagers or from market traders. |
| Resp | oonse indicators of mountain biological diversity | | | , | | | | | | | | | | | | _ | | | | |
| | Average width of break in an identified habitat | | | | | | | | ш | | | | | | | | | | | |
| 30 | corridor | | 2 * | | Ш | | | | 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 |
| | Community cooperation with conservation staff | | | | П | | | | | | | | | | | | | | Results of interviews and PRA with communities | - |
| 301 | (such as anti-poaching activities, monitoring) | | 8 * | | | | | | 1 1 | 1 | 1 | 1 | | | | 1 | 1 | 1 | and government agency staff. | Interviews and PRA |
| | 3/ | | | | П | | | | П | | 1 | | | | | | | | Results of interviews and PRA with communities | |
| 302 | Self-monitoring of resource by users | | 8 * | | | | | | 1 1 | 1 | 1 | | | | | 1 | 1 | 1 | and government agency staff. | Interviews and PRA |
| | Establishment of clearly defined boundaries and | | | | П | | | | | T | | | | | | | Ì | | | Review records, rules and regulations (annually |
| 303 | membership of resource using group | | 8 | | | | | | 1 1 | | | | | | | 1 | 1 | 1 1 | Project records, local rules, regulations | or less frequently) |
| | Existence of representative coordinating or | | | | П | | | | П | | | | | | | | | | | Annual surveys of communities and conservation |
| 304 | management body | | 8 * | | | | | | 1 1 | | | 1 | | | | 1 | 1 | 1 | Management records | staff, local records, interviews. |
| | | | | | | | | | П | | | | | | | | | | | Review of status of exisiting and pending |
| | Change of the legal and regulatory framework at | | | | | | | | | | | | | | | | | | | legislation and policies, including legislation or |
| | the national level | | 8 * | | | | | | 1 | | | | | | | 1 | 1 | 1 1 | Official gazette, national law registry | protected areas and endangered species |
| 306 | Change of the legal status of an area (e.g. lega | | 8 * | | | | | | 1 | Ī | | | | | | 1 | 1 | 1 | Official gazette, national law registry | Review status of boundary demarcation |

| | | | evel | | | | | | | | E | ΤΙ | hema | atic | area | 1 | | |
|-----|--|------|----------|-----|-------------------|----------|----|-----|-----|-------|------|----|------|------|------|----|------|---|
| No | In diactor/verifier | Soub | iol. c | org | Indicate D P S | or ty | pe | Sui | tab | oilit | tv M | ١, | AG D | L FC |) IW | МС | C Mt | nt Data sets Methodology |
| | Indicator/verifier gazettment), including definition of boundaries | ice | <u> </u> | T | D P : | <u> </u> | T | | 1 | T | _ | + | Т | T | T | T | 1 | Methodology |
| | Permanent institutional arrangements and/or management structure | 8 3 | * | | | | 1 | 1 1 | | 1 | 1 | | | | 1 - | 1 | 1 | Evaluate incorporation of project management units into permanent structures, co-management 1 Structural organization of management arrangements, decentralisation of management. |
| 308 | Change of use rights at a project site | 8 | * | | | | - | | | | | | | | 1 - | 1 | 1 | Track the development and implementation of policies and laws which define user rights in area. |
| | Local level or resource user/regulator awareness of the important components of relevant resource management laws and regulations | | * * | | | | 1 | | | | | | | | 1 - | | 1 | 1 Survey and intervies data Surveys and interviews |
| 310 | The number of infringements | 8 3 | * | | | | 1 | 1 1 | 1 | | | | | | 1 - | l | 1 | Establish agreed acceptable level and calcualte Evidence of infringements (physical evidence in the difference annually, or at an interval agreed acceptable level and calcualte the difference annually, or at an interval agreed with stakeholders. |
| | Percentage of arrests (protected area infringement, trade of endangered wildlife, bushmeat) leading to conviction | 8 | * | | | | | | | | | | | | 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 | l | | | | | | | 1 . | 1 | 1 | 1 Field and official/court reports Calcualte from field and official/court reports |
| | Proportion of budget allocated to highest priority conservation management areas/functions | 8 | * | | | | , | 1 | 1 | | 1 | | | | 1 . | l | 1 | identify highest priorities and revies budge 1 Budget documents allocation annually. |
| 314 | Change of sustainability of funding for management | 8 3 | * | | | | , | | | | | | | | 1 | 1 | 1 | Information on (proposed or actual) management 1 funding sources. Review information annually or less often |
| 315 | Availability and timeliness of release of funds | 8 | * | | | | , | 1 1 | 1 | | 1 | | | | 1 . | l | 1 | Annual budget. Local financial records. Results of Calculate from official records and interview interviews with local management staff. |
| | Change of extent to which field and local management staff are involved in, and understand, the budgetary process | | * | | | | , | | | | | | | | 1 . | l | 1 | 1 Results of interviews with local management staff. Interviews with local management staff |
| | The quality and/or quantity of facilities and equipment | 8 | * | | | | , | 1 1 | 1 | | | | | | 1 . | l | 1 | Identify the equipment and facilities needed, and Management records, inventory available |
| 318 | Number of trained staff in relevant agencies or areas (needed vs actual) | 8 | * | | | | | | | | | | | | 1 . | l | 1 | 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 |
| | The average performance rating of staff at a particular location Average amount of time (person-days of | 8 2 | * | | | | 1 | 1 1 | 1 | 1 | 1 | 1 | | 1 | 1 . | | 1 | Results of individual performance evaluations (duty statements; training history; work programs; Develop and use a performance rating system 1 fiel patrol records; interview results) and update ratings every 1-2 years. 1 Time sheets and fiel reports Calcualte field time |

| | | | Level of E Thematic area | | | | | | | | | | | | area | <u> </u> | | | Page 85 |
|-----|---|--------|--------------------------|-----|------------|------|-------|------|-------------|-----|---|---|-------------------|---|------|----------|------|--|--|
| | | Sou | L: _ I | | . l.a.alia | ator | rtype | | | | | v | | | | | | | |
| No. | Indicator/verifier | rce | <u>E</u> | S (| G D F | S | | R Si | Suitability | | | | AG DL FO IW MC Mt | | | | C Mt | Data sets | Methodology |
| | protected area staff) spent in the field | | | | | | | | | | | | | | | | | | |
| | Existence of representative coordinating or management body which involves key stakeholders | | * | | | | | 1 | | | | | | | 1 - | 1 | 1 | Project/government records, community 1 interviews | Examine records to conduct interviews. |
| | Existence of formal conservation agreements | 8 | * | | | | | 1 | 1 | 1 1 | 1 | | | | 1 - | 1 | 1 | Project/government records, communit _! 1 interviews | Examine records to conduct interviews. |
| 325 | Budget allocated to monitoring, or number of staff trained in monitoring | 8 | * | | | | Ш | 1 | 1 | 1 1 | Ц | | | 1 | 1 - | 1 | 1 | Results of review of budget, staffing, managemen 1systems | Review budget, staffing and manageme systems annually or less frequently. |
| | Status of monitoring information managemen system | 8 | * | | | | Ш | 1 | | | Ц | | | 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 | 1Annual work programs and patrol reports | Review annual work programms and pat reports. |
| 328 | Extent and timeliness of implementation of scheduled/planned activities | 8 | * | | | | | 1 | 1 | 1 | Ц | | | 1 | 1 - | 1 | 1 | 1 Management records | Calculate wether management bodies are meeti agreed targets. |
| | Number and nature of threats to site | 8 | * | | | | | 1 | 1 | 1 1 | Ц | | | 1 | 1 - | 1 | 1 | Recorded evidence of unlawful activity, field reports and aerial surveys, results of threat review, new development plans. | |
| | Existence of an agreed procedure for conflic resolution on natural resource managemen issues | t 8 | * | | | | | 1 | 1 | | Ц | | | 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 | * | | | | Ш | 1 | | | Ц | | | 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 | * | | | | Ш | 1 | 1 | 1 | Ц | | | 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 and | 8 | * * | | | | Ш | 1 | 1 | | Ц | | | 1 | 1 - | 1 | 1 | 1 Community and management records. | Review records, carry out interviews and PRA |
| | Existence of institutional capacity, policy and regulatory framework for the planning management and conservation of biologica diversity | , | * | | | | | 1 | 1 | 1 1 | 1 | | | 1 | 1 1 | 1 | 1 | 1 | |
| 356 | International conventions acceeded to | 9 | * | | | | | 1 | 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 (al categories of endangerment, and all types o plans of action) | | * | | | | | 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 | |

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