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|  |  | **IPBES**/5/INF/5 |
|  | **Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services** | Distr.: General26 January 2017English only |

Plenary of the Intergovernmental Science-Policy

Platform on Biodiversity and Ecosystem Services

Fifth session

Bonn, Germany, 7–10 March 2017

Item 6 (c) of the provisional agenda[[1]](#footnote-1)

Work programme of the Platform: knowledge and data

Update on the work on knowledge and data (deliverables 1 (d) and 4 (b))

 Note by the secretariat

1. In section II of its decision IPBES-2/5 on the work programme for the period 2014–2018, the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) established a task force on knowledge and data for the period 2014–2018, whose terms of reference are set out in annex III to the decision. The primary purpose of the task force is the implementation of deliverables 1 (d) and 4 (b) of the first work programme.
2. In section II of its decision IPBES-3/1 on the work programme for the period 2014–2018, the Plenary approved the data and information management plan for 2015 prepared by the secretariat, working with the Bureau and the task force, which is set out in annex II to the decision, and requested the secretariat to submit to the Plenary, for information, data and information management plans for each ongoing assessment and to develop data and information management plans in the context of any scoping process or report. Activities to be undertaken under the data and information management plan in 2016 were set out in appendix II to the note by the secretariat on an update on the work of the task force on knowledge and data submitted to the Plenary at its fourth session (IPBES/4/INF/7).
3. The note by the secretariat on work on knowledge and data (deliverables 1 (d) and 4 (b)) (IPBES/5/5) describes the progress made by the task force in all areas of its work and sets out a proposed workplan for 2017 and 2018 as well as suggested action for the Plenary. The annex to the present note provides additional information on progress made by the task force on knowledge and data with regard to the provision of guidance and support pertaining to the use of indicators in IPBES assessments as well as related activities for 2017 and 2018. It is presented without formal editing.

Annex

Update on the work of the task force on knowledge and data

 I. Overview

1. In order to implement the data and information management plan in 2016 and to respond more effectively to its mandate, the task force on knowledge and data established three task groups
(sub-groups of the task force consisting of members of the task force and resource persons), on
i) indicators and data for IPBES assessments; ii) a web-based infrastructure in support of data and information management needs; and iii) on knowledge generation catalysis. The current composition of the task force is set out in appendix I. The task force held its third meeting in Bonn, Germany, from 13 to 16 June 2016, and worked intersessionally, mainly through its three task groups. The following sections provide information on the work of the task groups on indicators.

 II. Guidance and support regarding the use of indicators in IPBES assessments

 A. Introduction

1. According to its terms of reference, the responsibilities of the task force on knowledge and data include to advise on the indicators and metrics to be used in IPBES products and on the standards necessary for capturing and managing associated data. The Plenary, at its fourth meeting, was presented with a draft shortlist of indicators for IPBES regional assessments (IPBES/4/INF/7, appendix V). In preparing the draft shortlist of indicators, it has become evident that there are large gaps in existing indicators relevant to IPBES assessments in terms of evaluating biodiversity, ecosystem services and their links to human well-being that needed to be addressed. Furthermore, assessment authors have voiced the need for support in the use of indicators.
2. The work of the task group on indicators comprises therefore three main elements: (i) the selection of core and highlighted indicators for use in IPBES assessments, (ii) the collaboration with organizations that have developed the selected indicators regarding the provision of information and data related to those indicators, and (iii) the provision of tailored support to assessment authors.

 B. Selection of a first set of core and highlighted indicators

1. Quantitative indicators of change in biodiversity, nature’s contributions to people and quality of life, and the direct and indirect drivers that underpin these changes represent an important assessment element. The task group on indicators aims to provide the authors of ongoing assessments with a set of indicators that cover all elements of the IPBES conceptual framework. Complementing other forms of information and knowledge that follow general guidelines but are not necessarily harmonized, standardized indicators have the potential to provide a common thread and quantitative point of comparison among assessments. They facilitate the synthesis envisioned for the global assessment, and ensure comparability and coherence across the regional assessments and between the regional/ land degradation and restoration assessments on the one hand, and the global assessment on the other hand. The IPBES set of indicators includes two types of indicators:
	1. a list of **core indicators**, which authors are urged to use (in addition to other indicators or data sources they may choose) in their work;
	2. a list of **highlighted indicators**, which authors may be interested in using, but with no expectation regarding their consistent use in the assessments.
2. Since the fourth session of the Plenary, the task group has finalized the identification of a list of **30 core indicators** (see appendix III) and **42 highlighted indicators** (see appendix IV). The indicators were selected through the following process:
	1. Symposium on biodiversity assessment and support for IPBES, held from 7 to 10 March 2016 in Monte Verita, Switzerland. The symposium was jointly organized by the Future Earth clusters “Global Biodiversity Assessment and Monitoring, Prediction and Reporting” and “Support for IPBES” as a first step in addressing the gaps identified in the list of indicators provided to the fourth session of the IPBES Plenary. The following information was prepared during the symposium:
		1. Tables evaluating the pertinence for IPBES assessments of indicators included in lists from the Ad Hoc Technical Expert Group on Indicators under the Convention on Biological Diversity, the Biodiversity Indicators Partnership, the Intergovernmental Panel on Climate Change, the National Oceanic and Atmospheric Administration of the United States of America, the list provided to the fourth session of the IPBES Plenary, and additional new indicators not included in these lists. The following 16 criteria were used: Relevance for IPBES framework, global coverage, disaggregation to IPBES regional or
		sub-regional scales, geographic representativeness, taxonomic representativeness (if applicable), spatial explicitness, comparability across regions, regular and recent updating, comparability with future projections, broad acceptance, scientific or institutional credibility, transparency, sensitivity, timing of the availability of the indicator, accessibility, and available institutional support;
		2. A list of new indicators that could be mobilised immediately or in the near future for marine systems, freshwater systems, biodiversity and ecosystem conservation status (Aichi Biodiversity Target 12) as well as ecosystem services, and human well-being;
		3. An explanatory text for each of these indicators, as well as information sheets regarding their use (“fact sheets”).
	2. Review by the IPBES task group on indicators of 200 indicators (141 indicators discussed under the Convention on Biological Diversity, 22 indicators selected by the Future Earth symposium, 12 indicators from the Environmental Performance Index, and 3 indicators that were part of the list of indicators presented to the fourth session of the IPBES Plenary, but not included in any of the previous lists);
	3. Continuation of the scoring exercise by the IPBES task group for the 200 indicators according to the criteria listed above, leading to the selection of 30 core and 42 highlighted indicators.
	4. Review and approval of these indicators by the IPBES knowledge and data task force, with comments addressed by the IPBES task group on indicators.
3. The lists of indicators were endorsed by the Multidisciplinary Expert Panel in July 2016. They were presented to assessment authors before and during the joint second author meeting of the regional assessments and the land degradation and restoration assessment in August 2016. Lists with basic information and links to metadata were distributed to the authors of these assessments.

 C. Selection of core and highlighted indicators with a socioeconomic focus

1. The 30 core indicators selected according to the process described in section B did not sufficiently cover socioeconomic (ecosystem services and human well-being) components of the IPBES conceptual framework. Therefore, a group of experts was formed to identify additional indicators with this focus. This process is still ongoing and is expected to continue throughout 2017. The following activities have been undertaken so far:
	1. Selection of a list of 66 potential indicators to inform on each of the different boxes and arrows of the IPBES conceptual framework;
	2. Identification of 80 additional indicators that address different dimensions of well-being and sustainability, including food security, energy security, water security, biodiversity, health, income, trade-offs, livelihoods, justice and equity, resilience and sustainability;
	3. Development of a conceptual approach and use of narratives to identify key indicators that provide information across boxes in the IPBES conceptual framework as well as across dimensions of well-being and sustainability;
	4. Symposium on biodiversity assessment and support for IPBES, held from 7 to 10 March 2016 in Monte Verita, Switzerland. During the symposium, the group reduced the total list of indicators with a socioeconomic focus to 86 that cover both the different boxes of the IPBES conceptual framework and the different dimensions of well-being and sustainability;
	5. Presentation of the 86 indicators at the 2016 GEO BON Open Science Conference, which was held from 4 to 6 July, 2016 in Leipzig, Germany;
	6. Scoring by the expert group of the 86 indicators according to the same 14 criteria listed in paragraph 5 (a(i)) above, resulting in a list of 25 indicators;
	7. Presentation and consultation regarding the 25 indicators during the joint second author meeting of the regional assessments and the land degradation and restoration assessment and the first author meeting of the global assessment and identification of a list of 18 consensus indicators for review by the task force on data and knowledge;
	8. After agreement by the task force on 15 indicators, presentation of these indicators to the Multidisciplinary Expert Panel at its eighth meeting in October 2016, and recommendation by the Multidisciplinary Expert Panel to the authors of the regional assessments to use a small set of 9 indicators with socioeconomic focus, as far as possible (appendix V);
	9. Request by the Multidisciplinary Expert Panel to continue the work on additional indicators with a socioecological focus for use in the global assessment for an even coverage of the IPBES conceptual framework, including the development of narratives to illustrate their role.

 D. Collaboration with organizations in provision of information and data related to indicators

1. The task group on indicators provides comprehensive support to assessment authors in the use of the IPBES core and highlighted indicators. To this end, under the overall guidance of the task group lead, the technical support unit (TSU) on knowledge and data, supported by the Biodiversity Indicators Partnership, is collaborating with the organizations that have developed indicators that are included in the IPBES core and highlighted lists (appendix III and IV) in the provision of indicator associated information and data to assessment authors. The resources provided by the indicator providers are
(i) factsheets that contain descriptive and technical information on indicators with reference materials, (ii) visuals and storylines that contain global (and, in some cases, regional) level graphs and maps with brief analyses, and (iii) datasets with values (and sample size and uncertainties, in some cases) at IPBES regional, sub-regional and country levels. The descriptive and visuals/storyline factsheets are intended to orient assessment authors in understanding and using the indicators properly in relevant sections of the assessments.
2. A portal for information and data on IPBES indicators has been made available at www.ipbes.net/indicators. Factsheets and visuals/storylines that have been submitted by the institutes providing the indicators are made available on this portal. The global, regional and land degradation and restoration assessment authors have been informed on the availability of the resources and have been provided with access to the indicators web portal. Additional resources will be posted as they become available.

 E. Provision of tailored support to assessment authors

1. The task group on indicators provides assessment authors with tailored support, including the re-calculation of data for IPBES regions and the preparation of maps and graphs. Technically supported by the TSU on knowledge and data, under the guidance of the task group lead, datasets of the IPBES core indicators are further processed to visualize at IPBES regional, sub-regional and country levels for trend analyses and multi-scale, cross-regional comparisons. A workflow is being developed to produce standardized graphs and, as TSU capacity and expertise allows, maps for easy interpretation and integration of core indicators into the drafts of IPBES assessments. There is an effort to put in place a collaboration, via the TSU, between assessment groups and indicator providers in co-producing visuals (graphs and maps) and narratives that are relevant for IPBES assessments.

 F. Next steps

1. In terms of the identification of additional indicators with a socioeconomic focus, the following activities are planned:
	1. The expert group working on indicators with socioeconomic focus plans to hold a workshop in April 2017, immediately following the IPBES global workshop on values, to revisit the list of indicators, and develop narratives;
	2. The recommended additional core and highlighted indicators with socioeconomic focus will be reviewed by the IPBES task group on indicators and the IPBES knowledge and data task force, and will be submitted to the IPBES Multidisciplinary Expert Panel for its endorsement;
	3. Collaboration with indicator holding organizations will be initiated regarding information and data associated with the endorsed indicators, and relevant resources will be provided to the assessment authors.
2. In terms of collaboration with organizations and tailored support to assessment authors, the following activities are planned:
	1. Graphs and maps developed in standardized format will be made available to authors through the IPBES indicators portal. Datasets will be made available subject to arrangements with indicator providers.
	2. Visual resources (graphs and maps) will be revised according to specific feedback from the assessment groups and, as much as possible, from indicator providers as a part of the refinement process. The indicator visuals are prepared in support of all ongoing assessments.

 Appendix I

 List of members and resource persons of the task force on knowledge and data

| **Role** | **Name** | **Task group(s)** | **Gender** | **Country** |
| --- | --- | --- | --- | --- |
| Bureau, co-chair of the task force | Asghar Mohammadi Fazel | Knowledge generation | M | Iran |
| Bureau, co-chair of the task force | Youngbae Suh | Indicators | M | Republic of Korea |
| MEP  | Yi Huang |  | F | China |
| MEP  | Mark Lonsdale | Knowledge generation | M | Australia |
| MEP  | Voahangy Raharimalala | Indicators | F | Madagascar |
| MEP  | Yoshihisa Shirayama |  | M | Japan |
| MEP  | Paul Leadley | Indicators | M | France |
| Expert | Andras Baldi | Knowledge generation | M | Hungary |
| Expert | Juan Carlos Bello Silva | Web-based Infrastructure | M | Colombia |
| Expert | Romain Julliard | Indicators | M | France |
| Expert | Sandra Knapp |  | F | United Kingdom |
| Expert | Catherine Laurent | Knowledge generation | F | France |
| Expert | Gregory Insarov | Web-based Infrastructure | M | Russia |
| Expert | Jae Chun Choe | Web-based Infrastructure | M | Republic of Korea |
| Expert | Walter Jetz | Indicators, Knowledge generation | M | Germany |
| Expert | Ferenc Horvath | Web-based Infrastructure | M | Hungary |
| Expert | Nidhi Nagabhatla | Web-based Infrastructure, Knowledge generation | F | India/Canada |
| Expert | Hiroya Yamano |  | M | Japan |
| Expert | Antonio Saraiva | Web-based Infrastructure | M | Brazil |
| Expert | Luthando Dziba | Web-based Infrastructure | M | South Africa |
| Expert | Sheila Vergara | Web-based Infrastructure | F | Philippines |
| Expert | Sheila Mbiru | Web-based Infrastructure | F | Kenya |
| Expert | James Watson |  | M | Australia |
| Expert | Eduardo Dalcin | Web-based Infrastructure | M | Brazil |
| Expert | Mialy Andriamahefazafy | Knowledge generation | F | Madagascar |
| Resource Person | Sarah Ivory | Indicators | F | BIP |
| Resource Person | Anna Chenery | Indicators | F | BIP |
| Resource Person | Cornelia Krug | Indicators, Knowledge generation | F | University Zuerich, UZH |
| Resource Person | Patricia Balvanera | Indicators | F | National Autonomous University of Mexico |
| Resource Person | Carlos Guerra | Web-based Infrastructure | M | GEO-BON |
| Resource Person | Salvatore Arico | Knowledge generation | M | UNESCO |
| Resource Person | Anne-Helene Prieur-Richard | Indicators, Knowledge generation | F | Future Earth |
| Resource Person | Tim Hirsch | Web-based Infrastructure, Knowledge generation | M | GBIF |
| Resource Person | Kyle Copas | Web-based Infrastructure | M | GBIF |
| Resource Person | Tim Wilkinson | Web-based Infrastructure | M | UNEP-WCMC |
| IPBES Secretariat (TSU) | HyeJin Kim | Indicators | F |  |
| IPBES Secretariat (TSU) | Sungryong Kang | Knowledge generation | M |  |
| IPBES Secretariat (TSU) | Jihyun Yoon | Web-based Infrastructure | F |  |

 Appendix II

 List of resource persons of the group working on additional socio-economic indicators

|  |  |  |
| --- | --- | --- |
| **Name** | **Affiliation** | **Gender** |
| Patricia Balvanera | National Autonomous University of Mexico, Mexico | F |
| Paul Leadley | University of Paris, France | M |
| Cornelia Krug | University of Paris, France | F |
| Berta Martin-Lopez | Leuphana University, Germany | F |
| Tuyeni Mwampamba | National Autonomous University of Mexico, Mexico | F |
| Harini Nagendra | Azim Premji University, India | F |
| Unai Pascual | Basque Centre for Climate Change (BC3), Spain  | M |
| Fabio Scarano | Conservation International, Brazil | M |
| Suneetha Subramanian | United Nations University, Japan | F |
| Katie Brauman | University of Minnesota, UAS | F |
| Alexandra Marques | Leiden University, The Netherlands | F |
| Ilse Geijzendorffer | Tour du Valat, France | F |
| Dan Faith | Australian Museum, Australia | M |
| Marie Stenseke | University of Gothenburg, Sweden | F |
| HyeJin Kim | National Institute of Ecology, Korea | F |

 Appendix III

 List of core indicators selected for use in IPBES regional assessments and global assessment

| **Aichi Target** | **Specific Indicator** | **DPSIR¹** | **CF²** | **GA Chapter** | **RA Chapter** | **LDRA Chapter** | **Origin³** | **BIP⁴** | **Source** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4 | Ecological Footprint | P | DD | 2,3,4 | 4 | 3 | CBD | B | Global Footprint Network |
| 4 | Water Footprint (Human appropriation of fresh water) | P | DD | 2,3,4 | 4 | 3 | CBD |  | Water Footprint Network |
| 4 | Percentage of Category 1 nations in CITES | R | IGID | 2,3,6 | 4,6 |  | CBD | BP | Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) |
| 5 | Biodiversity Habitat Index | S | DD, BEF | 2,3,4 | 3,4 | 4 | CBD |  | GEO BON - CSIRO |
| 5, 12 | Species Habitat Index | P,S | DD, BEF | 2,3,4 | 3,4 | 4 | CBD |  | GEO BON - Map of Life |
| 5 | Forest area as a percentage of total land area  | S | DD, BEF | 2,3,4 | 3,4 | 4 | CBD | B | FAO |
| 5 | Trends in forest extent (tree cover) | S | DD, BEF | 2,3,4 | 3,4 | 4 | CBD |  | Hansen et al., 2013 |
| 5, 7, 14 | Total wood removals | S,I | DD, NBP | 2,3,4,5,6 | 2,4,5 | 5 | Future Earth | BP | FAO |
| 6 | Trends in fisheries certified by the Marine Stewardship Council | R | IGID | 2,3,4 | 3,4 |  | CBD |  | Marine Stewardship Council |
| 6 | Estimated fisheries catch and fishing effort | P | DD, BEF | 2,3,4 | 3,4 |  | CBD |  | Sea Around Us |
| 6 | Proportion of fish stocks within biologically sustainable levels | S | BEF | 2,3 | 3 |  | CBD | B | FAO |
| 6,14 | Inland fishery production | S, I | BEF, NBP | 2,3,4 | 2,4 |  | Future Earth | BP | FAO |
| 6 | Marine Trophic Index | S | DD, BEF | 2,3,4 | 3,4 |  | Future Earth | B | Sea Around Us |
| 7 | Proportion of area of forest production under FSC and PEFC certification | R | IGID, DD | 2,3,4,6 | 4,6 | 6 | CBD | B | Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC) |
| 7 | Nitrogen Use Efficiency | P | DD | 2,3,4 | 4 | 3 | EPI |  | Lassaletta et al., (2014) from Environmental Performance Index (EPI) |
| 7 | Nitrogen + Phosphate Fertilizers (N+P205 total nutrients) | P | DD | 2,3,4 | 4 | 3 | Future Earth | BP | FAO |
| 8 | Trends in pesticide use | P | DD | 2,3,4 | 4 |  | CBD | BP | FAO |
| 8 | Trends in nitrogen deposition | P | DD | 2,3,4 | 4 |  | CBD | B | International Nitrogen Initiative |
| **Aichi Target** | **Specific Indicator** | **DPSIR¹** | **CF²** | **GA Chapter** | **RA Chapter** | **LDRA Chapter** | **Origin³** | **BIP⁴** | **Source** |
| 11 | Percentage of areas covered by protected areas - marine, coastal, terrestrial, inland water | R | IGID | 2,3,6 | 4,6 |  | CBD | B | UNEP-WCMC, IUCN |
| 5, 11, 12 | Protected area coverage of Key Biodiversity Areas (including Important Bird and Biodiversity Areas, Alliance for Zero Extinction sites)  | R | IGID, DD | 2,3,4,6 | 4,6 |  | CBD | BP | BirdLife International, IUCN, Alliance for Zero Extinction (AZE) |
| 11 | Species Protection Index | P,R | IGID, DD | 2,3,4,6 | 4,6 |  | CBD |  | GEO BON - Map of Life |
| 11 | Protected area management effectiveness | R | IGID, DD, BEF | 2,3,6 | 4,6 |  | IPBES | BP | UNEP-WCMC |
| 11 | Protected Area Connectedness Index | R | DD, IGID | 2,3,4,6 | 4,6 |  | CBD |  | GEO BON - CSIRO |
| 12, 14 | Biodiversity Intactness Index  | P,S | DD, BEF | 2,3,4,5 | 4,5 | 4 | CBD |  | GEO BON - PREDICTS |
| 12 | Red List Index  | S | BEF | 2,3 | 3 |  | CBD | B | IUCN, BirdLife International and other Red List Partners |
| 13 | Proportion of local breeds, classified as being at risk, not-at-risk or unknown level of risk of extinction | S | BEF, NBP | 2,3,4 | 2,3 |  | CBD | B | FAO |
| 14 | Percentage of undernourished people | I | GQL | 2,3,4 | 2 | 5 | Future Earth | BP | FAO |
| 17 | Number of countries with developed or revised NBSAPs | R | IGID | 2,3,6 | 4,6 |  | CBD | B | Secretariat of the Convention on Biological Diversity (CBD) |
| 19 | Proportion of known species assessed through the IUCN Red List  | R | IGID | 2,3,6 | 4,6 |  | CBD | BP | IUCN |
| 19 | Species Status Information Index | R | IGID, BEF | 2,3,6 | 4,6 |  | CBD |  | GEO BON - Map of Life |

¹ DPSIR - D: Drivers, P: Pressure, S: Status, I: Impact, R: Response

² CF (Conceptual Framework) - DD: direct driver, NBP: nature's benefit to people/ ecosystem goods and services, BEF: nature/biodiversity and ecosystem functions, IGID: institutions, governance and other indirect drivers, GQL: good quality of life/human well-being

³ CBD: Convention of Biological Diversity SBSTTA 20 draft indicator list; Future Earth: recommended by Future Earth indicator group; EPI: used in the Yale Environmental Protection Index; IPBES: added by the IPBES Task Force for Data and Knowledge

⁴ BIP (Biodiversity Indicator Partnership): B: indicators in BIP global suite, BP: data/indicator holder in BIP partnership

Appendix IV

List of highlighted indicators selected for use in IPBES regional assessments and global assessment

| **Aichi Target** | **Specific Indicator** | **DPSIR¹** | **CF²** | **GA Chapter** | **RA Chapter** | **Origin³** | **BIP⁴** | **Source** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2 | Number of countries implementing natural resource accounts, excluding energy, within the System of Environmental-Economic Accounting (SEEA) | R | IGID | 2,3,6 | 4,6 | CBD |  | UNSTATS, World Bank |
| 3 | Number of countries with national instruments on biodiversity relevant tradable permit schemes  | R | IGID | 2,3,6 | 4,6 | CBD | BP | OECD |
| 3 | Number of countries with national instruments on biodiversity-relevant taxes, charges and fees | R | IGID | 2,3,6 | 4,6 | CBD | BP | OECD |
| 3 | Number of countries with national instruments on REDD plus schemes | R | IGID | 2,3,6 | 4,6 | CBD |  | UNFCCC |
| 3 | Trends in potentially harmful elements of government support to agriculture (produced support estimates) | R | IGID | 2,3,6 | 4,6 | CBD | B | OECD |
| 3 | Trends in potentially harmful elements of government support to fisheries | R | IGID | 2,3,6 | 4,6 | CBD | BP | OECD |
| 4 | Human appropriation of net primary productivity | P | DD | 2,3,4 | 4 | CBD |  | Krausmann et al., 2013 |
| 4 | Trend in Carbon Intensity | R | IGID | 2,3,6 | 4,6 | EPI |  | WRI, WB, IEA from Environmental Performance Index (EPI) |
| 5, 12 | Global climate risk Index | D,I | DD,NBP | 2,3,4 | 2,4 | Future Earth |  | germanwatch.org |
| 5, 14 | Wetland Extent Trend Index | S | BEF,NBP | 2,3,4 | 2,3 | IPBES | B | UNEP-WCMC |
| 5-12, 14 | Living Planet Index  | S | BEF | 2,3 | 3 | CBD | B | WWF/ZSL |
| 6 | BioTime-Local Species Richness, Temporal Species Turnover, Overall Abundance | S | BEF | 2,3 | 3 | Future Earth |  | Dornelas et al., 2014 |
| 6 | Coverage of fisheries with management measures to reduce bycatch and discards | R | IGID | 2,3,6 | 4,6 | CBD | BP | FAO |
| 6 | Global effort in bottom trawling | P | DD | 2,3,4 | 4 | CBD |  | Around the Sea |
| 6 | Mean length of fish | S | BEF | 2,3 | 3 | Future Earth |  | Shin et al., 2010 |
| 6 | Non declining exploited species  | S | BES | 2,3,4 | 3,4 | Future Earth | BP | Kleisner et al., 2015 |
| 6 | Number and coverage of stocks with adaptive management systems / plans | R | IGID | 2,3,6 | 4,6 | CBD | BP | FAO |
| 6 | Policies make adequate provisions to minimize impacts of fisheries on threatened species. | R | IGID | 2,3,6 | 4,6 | CBD | BP | FAO |
| 6 | Policies to secure that mortalities and significant indirect adverse impacts on non-species are accounted for are in place | R | IGID | 2,3,6 | 4,6 | CBD | BP | FAO |
| 6 | Presence of regulations requiring recovery of depleted species | R | IGID | 2,3,6 | 4,6 | CBD | BP | FAO |
| 6 | Proportion of predatory fish | S | BEF | 2,3 | 3 | Future Earth |  | Shin et al., 2010 |
| 7 | Areas of agricultural land under conservation agriculture  | P,R | IGID,DD | 2,3,4,6 | 4,6 | CBD | BP | FAO |
| 7 | Nitrogen Use Balance | P | DD | 2,3,4,5 | 4,5 | EPI |  | Zhang et al. 2015 |
| 7 | Number of world natural heritage sites per country per year | P | NBP,IGID,GQL | 2,3,4,6 | 2,4,6 | Future Earth |  | UNESCO |
| 7 | Proportion of agricultural area under productive and sustainable agriculture (indicator for SDG 2.4) | P,R | IGID,DD | 2,3,4,6 | 4,6 | CBD | BP | FAO |
| 9 | Trends in invasive alien species vertebrate eradications | R | IGID | 2,3,6 | 4,6 | CBD | B | IUCN ISSG, Island Conservation |
| 9 | Trends in the numbers of invasive alien species introduction events  | P | DD | 2,3,4 | 4 | CBD | B | IUCN ISSG |
| 11 | Protected area coverage of terrestrial, marine and freshwater ecoregions | R | IGID,BEF | 2,3,6 | 3,4,6 | CBD | B | UNEP-WCMC |
| 11 | Protected Area Representativeness Index | P,R | IGID,DD | 2,3,4,6 | 4,6 | CBD |  | GEO BON-CSIRO |
| 11 | The Wildlife Picture Index (disaggregated by protected area) | S,I,R | IGID,DD,BEF | 2,3,4,6 | 3,4,6 | CBD | B | Tropical Ecology Assessment and Monitoring (TEAM) Network |
| 12 | Mean Species Abundance (GLOBIO3) | S | BEF | 2,3,4,5 | 3,5,7 | Future Earth |  | Alkemade et al., 2009 |
| 12 | Number of species extinctions  | S | BEF | 2,3 | 3 | CBD | B | IUCN, BirdLife International and others |
| 12 | RAMSAR areas | S | BEF,IGID | 2,3,6 | 3,4,6 | Future Earth | BP | RAMSAR |
| 14 | Better Life Index | I | GQL | 2,3,4 | 2 | CBD | BP | OECD |
| 14 | Percentage of population using safely managed drinking water services (indicator for SDG 6.1) | I | GQL | 2,3,4 | 2 | CBD |  | WHO, UNICEF |
| 14, 15 | Land under cereal production (ha) | I | NBP,DD | 2,3,4 | 2,4 | Future Earth |  | World Bank (WB) |
| 15 | Global Ecosystem Restoration Index | S | IGID,BEF | 2,3,6 | 2,4,6 | CBD |  | GEO BON, iDiv |
| 16 | Number of countries that have adopted legislative, administrative and policy frameworks to ensure fair and equitable sharing of benefits | R | IGID | 2,3,6 | 4,6 | CBD | BP | Secretariat of the CBD |
| 18 | Global Index of Linguistic Diversity and language threat level. | S | BES,NBP | 2,3,4 | 2,3 | CBD | B | Teralingua |
| 19 | Growth in species occurrence records accessible through GBIF  | R | IGID | 2,3,6 | 4,6 | CBD | B | GBIF |
| 19 | Species represented in the barcode of life data system | S,R | IGID | 2,3,6 | 4,6 | CBD |  | Barcode of Life Data Systems |
| 20 | Information provided through the financial reporting framework, adopted by decision XII/3 | R | IGID | 2,3,6 | 4,6 | CBD | BP | Secretariat of the CBD |

¹ DPSIR - D: Drivers, P: Pressure, S: Status, I: Impact, R: Response

² CF (Conceptual Framework) - DD: direct driver, NBP: nature's benefit to people/ ecosystem goods and services, BEF: nature/biodiversity and ecosystem functions, IGID: institutions, governance and other indirect drivers, GQL: good quality of life/human well-being

³ CBD: Convention of Biological Diversity SBSTTA 20 draft indicator list; Future Earth: recommended by Future Earth indicator group; EPI: used in the Yale Environmental Protection Index; IPBES: added by the IPBES Task Force for Data and Knowledge

⁴ BIP (Biodiversity Indicator Partnership): B: indicators in BIP global suite, BP: data/indicator holder in BIP partnership

Appendix V

 List of socioeconomic indicators recommended for use in IPBES regional assessments

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Aichi Target** | **Specific Indicator** | **DPSIR¹** | **CF²** | **GA Chapter** | **RA Chapter** | **Origin³** | **BIP⁴** | **Source** |
| ***Institutions, Governance and other Indirect Drivers*** |
|  | Total human population  | P | IGID | 2,3,6 | 4,6 | Future Earth (S) |  | World Bank |
|  | GDP | S | IGID | 2,3,4 | 4,6 | Future Earth (S) |  | World Bank |
| ***Good Quality of Life***  |
| 14 | Food Security: Countries requiring external assistance for food (famine relief) | S | GQL | 2,3,4 | 2 | Future Earth (S) | BP | FAO |
| 14 | Food Security: Calorie supply per capita (kcal/capita.day) | S | GQL | 2,3,4 | 2 | Future Earth (S) | BP | FAO |
| 14 | Water Security: Proportion of population using safely managed drinking water services (SDG 6.1.1) | S | GQL | 2,3,4 | 2 | CBD |  | UNICEF/WHO |
| 14 | Water Security: Freshwater consumption as % of total renewable water resources/watershed | S | GQL | 2,3,4 | 2 | Future Earth (S) | BP | FAO |
|  | Equity: GINI index  | S | GQL | 2,3,4 | 2 | Future Earth (S) |  | World Bank |
| ***Nature's Benefit to People***  |
| 14 | Food: World grain production by type/capita.year | S | NBP | 2,3,4 | 2 | Future Earth (S) | BP | FAO |
| 18 | Non-material NBPs: Index of Linguistic Diversity (ILD) | S,P | NBP, IGID | 2,3,4,6 | 2,4,6 | CBD | B | UNESCO |
| ¹ DPSIR - D: Drivers, P: Pressure, S: Status, I: Impact, R: Response |
| ² CF (Conceptual Framework) - DD: direct driver, NBP: nature's benefit to people/ ecosystem goods and services, BEF: nature/biodiversity and ecosystem functions, IGID: institutions, governance and other indirect drivers, GQL: good quality of life/human well-being |
| ³ CBD: Convention of Biological Diversity SBSTTA 20 draft indicator list; Future Earth: recommended by Future Earth indicator group; EPI: used in the Yale Environmental Protection Index; IPBES: added by the IPBES Task Force for Data and Knowledge |
| ⁴ BIP (Biodiversity Indicator Partnership): B: indicators in BIP global suite, BP: data/indicator holder in BIP partnership |

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1. IPBES/5/1/Rev.1. [↑](#footnote-ref-1)