UNEP
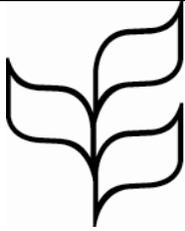
**Convention on Biological Diversity**

Distr.
GENERAL

UNEP/CBD/AHTEG-SP-Ind/1/INF/7
20 May 2011

ORIGINAL:  ENGLISH

AD HOC TECHNICAL EXPERT GROUP MEETING
  ON INDICATORS FOR THE STRATEGIC PLAN
  FOR BIODIVERSITY 2011-2020
High Wycombe, United Kingdom, 20-24 June 2011

**STREAMLINING EUROPEAN BIODIVERSITY INDICATORS - LESSONS LEARNED FROM
A REGIONAL PROCESS**

*Information note by the Executive Secretary*

1.      The Executive Secretary is pleased to circulate herewith, for the information of participants in the meeting of the Ad Hoc Technical Expert Group on Indicators for the Strategic Plan for Biodiversity 2011-2020, an information document entitled "Streamlining European Biodiversity Indicators - lessons learned from a regional process" submitted by the SEBI (Streamlining European Biodiversity Indicators) Coordination Team.

2.      The document is being circulated in the form and language in which it was provided to the Secretariat.

# SEBI (Streamlining European Biodiversity Indicators) - lessons learned from a regional process

**Summary**

With the adoption of the 2020 European and global biodiversity targets, and the development of an EU Biodiversity Strategy 2011-2020 to be adopted in 2011, the question of how progress on the targets will be measured and reported needs to be asked. The information note below summarises the background and achievements of the Streamlining European Biodiversity Indicators (SEBI) project, how the 2010 biodiversity target was measured and which methodological lessons have been learned.

Moving forward towards 2020 it will be important to transparently measure progress towards the European and global 2020 targets. SEBI is in a strong position to contribute to this. SEBI has proposed to undertake a co-ordinating role to identify a coherent set of indicators for pan-Europe.

**1.Background**

The Pan-European SEBI 2010 (Streamlining European 2010 Biodiversity Indicators) initiative was launched in 2005**.** Its aim was to develop a European set of biodiversity indicators – based on those already existing, plus new indicators as necessary - to assess and inform about progress towards the 2010 targets. From its inception SEBI linked the global framework set by the Convention on Biological Diversity with regional and national indicator initiatives.

SEBI has been a partnership between the EEA (the European Environment Agency), its Topic Centre on Biological Diversity (ETC/BD), DG Environment of the European Commission, the Czech Republic (as lead country for the Kiev Resolution action plan on biodiversity indicators, ECNC (the European Centre for Nature Conservation), UNEP/ PEBLDS Secretariat, and UNEP-WCMC (the World Conservation Monitoring Centre). The strategic orientation of the work has been undertaken by a Coordination Team with representatives from the above organisations.

In 2005 the Coordination Team set up six Expert groups involving around 120 experts nominated by European countries as well as Non-Governmental Organizations. These Expert Groups compiled information about existing biodiversity indicators and explored possibilities for developing new ones, based on the CBD focal areas. The compilation of a large set of candidate indicators culminated in a selection process at the end of 2006 to choose a first limited set of European biodiversity indicators (the current 26 indicators set). These were used in several reports to assess European progress towards the 2010 targets.

From the very beginning, the proposed set of indicators has been seen holistically, stressing mutual relationships among the individual indicators and their power to deal with uncertainty. Special attention was paid to the task to produce user-friendly indicators. Furthermore SEBI aimed at improving the provision of information to policy-makers along the DPSIR chain (Drivers, Pressures, State, Impact, Responses) in support of policy effectiveness.

**2. Key outputs**

**2007**

A technical report describing the SEBI2010 process as well as specifications of the 26 indicators selected was published in 2007 (available at http://reports.eea.europa.eu/technical_report_2007_11/en).

**2009**

The first assessment of progress towards the 2010 targets based on the SEBI 2010 indicators was published in 2009, available at www.eea.europa.eu/publications/progress-towards-the-european-2010-biodiversity-target**.**

This report supported the early message from the former Environment Commissioner at the European Commission Conference on Biodiversity Protection – Beyond 2010

(Priorities and options for future EU Policy) held in Athens in April 2009[1] who acknowledged that the European target of halting the loss of biodiversity across the continent by 2010 would not be met.

SEBI 2010 indicator fact sheets were also published in 2009, each containing short assessments for each indicator. These are available at www.eea.europa.eu/publications/progress-towards-the-european-2010-biodiversity-target-indicator-fact-sheets.


**2010**

In 2010 the SEBI indicators were made available on-line through the EEA Indicators Management System (IMS) as part of the launch of the EEA managed European Biodiversity Data Centre (accessible at www.eea.europa.eu/themes/biodiversity/dc) and of the Biodiversity Information System for Europe – BISE (http://biodiversity.europa.eu/).

In 2010 the report Assessing Biodiversity in Europe – the 2010 report (available at www.eea.europa.eu/publications/assessing-biodiversity-in-europe-84**)** made use of the SEBI 2010 indicators, and other relevant national and regional information sources, to present the status, changes and trends in components of pan-European biodiversity, and the implications of these trends for biodiversity management policy and practice. The report also reflects on the challenges that remain for the conservation and sustainable use of Europe's biodiversity.

Furthermore in 2010 the SEBI set constituted a major source for the 2010 European Biodiversity Baseline (available at www.eea.europa.eu/publications/eu-2010-biodiversity-baseline).


**3. Global - regional - national**

SEBI represents European biodiversity indicator work on the Steering Committee of the 2010 Biodiversity Indicators Partnership (BIP)[2]. This is a global initiative to develop and promote indicators for the consistent monitoring and assessment of biodiversity at a global scale. The BIP brings together over 40 international organisations working to support regular delivery of biodiversity indicators at the global and national levels.

SEBI indicators have been used in a variety of ways, including the Environment Policy Review to monitor progress in implementation of the EU Sixth Environment Action Programme, and the 2010 Assessment of the EU Biodiversity Action Plan.[3] The EU 2010 Biodiversity Baseline[4] is based on SEBI indicators and methodological guidance.[5] SEBI was also a stimulus and an example to regional-regional cooperation; for example the recently launched ASEAN biodiversity outlook[6] and the indicator capacity strengthening work undertaken in the BICS Africa project[7].

SEBI has been presented at many side events (e.g. Green Week, CBD COP, EU Council and EP) and trainings have been provided in pan-Europe with the support of UNEP and EU.

Stakeholders, including Countries, were kept informed of the process as it developed. The streamlining work has been greatly appreciated - the indicator framework has been flexible enough to adapt to country needs, and has therefore helped them develop their own system of indicators. SEBI has been both a supporting process/service for country indicator development and a useful tool to demonstrate European progress to decision makers.

---

[1] http://ec.europa.eu/environment/nature/biodiversity/conference/index_en.htm

[2] www.bipindicators.net

[3] http://ec.europa.eu/environment/nature/knowledge/rep_biodiv_ap/index_en.htm

[4] http://www.eea.europa.eu/publications/eu-2010-biodiversity-baseline/

[5] Interlinkages between the European biodiversity indicators, improving their information power (Report of the working group on Interlinkages of the Streamlining European Biodiversity Indicators project (SEBI)) - http://biodiversity-chm.eea.europa.eu/information/indicator/F1090245995/SEBI%20publications-2005-2010/reports-sebi-working-groups/interlinkages-between-the-european-biodiversity-indicators-improving-their/download

[6] Available at www.aseanbiodiversity.org

[7] www.bipnational.net/workshopsandprojects

Some examples of country biodiversity indicators using SEBI indicators are:

Belgium: Flanders (www.inbo.be/files/bibliotheek/40/213740.pdf),

Belgium: Wallonia

(http://etat.environnement.wallonie.be/index.php?page=environmental-outlook-2010),

Czech Republic
(http://www.mzp.cz/osv/edice.nsf/DCDC245D147DC3ACC125780E0049429C/$file/OVV-Zprava_naplnovani_cile-20101220.pdf),

France: http://www.naturefrance.fr/IMG/pdf/indicateurs-biodiv-SNB-metropole.pdf

Germany
www.bfn.de/fileadmin/MDB/documents/themen/monitoring/Indicators_German_Biodiversity_Strategy.pdf

Portugal (www.eea.europa.eu/soer/countries/pt/nature-protection-and-biodiversity-state)
(ongoing).

## 4. Future perspectives

New biodiversity targets have been set at global and European levels. Indicators to measure progress towards the 2020 targets will be needed at global, European, and national scales.

Work has already been undertaken to map the sub-targets in the EU Biodiversity Strategy 2011-2020 to global targets and link these with the indicators in the SEBI set. Integration across different sectors (e.g., agriculture, fisheries, forestry, physical/land-use planning, etc.) will be necessary. SEBI, together with other indicator sets such as EEA Core Set Indicators and the Agri-Environmental Indicators should bring together an integrated set of existing indicators, across sectors, from which those needed to measure progress to 2020 can be drawn. It is also likely that some additional indicators will be needed.

The SEBI 2010 project was created as a pan-European process with a focus on bridging between global-regional-national indicator production and collating information within a regional hub of knowledge. It has been successful in this. There is now a need for further indicator development to underpin measurement of the 2020 targets, perhaps going beyond the CBD to form a more integrated approach between all the biodiversity related multilateral environmental agreements.

## 5. Methodological lessons learned

This section briefly lists some methodological issues encountered in the SEBI process - from selection to interpretation of the indicators in the SEBI set. It is largely based on the work of a SEBI Working Group on "Interlinkages" which was set up by the SEBI Coordination Team and which worked from December 2007 to April 2009. A full report discussing the work of this group is available on the biodiversity clearinghouse[8].

While some of the lessons learned are may be specific to the set of targets and indicators for the original 2010 target, others may be useful in the AHTEG discussions on targets in the 2011-2020 Strategic Plan and corresponding indicators.

5.1. Answering the policy questions

According to the CBD (UNEP 1997b, 2003a[9]), four key questions are: *What is changing?*, *Why is it changing?*, *Why is it important?* and *What are we doing about it?*

---

[8] http://biodiversity-chm.eea.europa.eu/information/indicator/F1090245995/SEBI%20publications-2005-2010/reports-sebi-working-groups/interlinkages-between-the-european-biodiversity-indicators-improving-their
[9] UNEP/CBD/SBSTTA/3/INF/13; UNEP/CBD/SBSTTA/9/10

No individual indicator can answer one of those questions sufficiently, but a subset of indicators could if well designed and mutually coherent. Selecting indicators should be done considering not only their individual merit but also the way they can complement each other to answer each of the policy questions.

The issue of scale is important. A lesson from SEBI as a regional level process is that answers to the policy questions may vary greatly in different parts of Europe, a way needs to be found to show these

varying trends. Two additional scales between Europe and the country level – one according to major ecosystem type and one according to sub regional grouping – Mediterranean, Scandinavian, etc - might provide the required information for policymakers and would be feasible from the perspective of financial resources and data collection.

5.2. Illustrating loss of biodiversity with indicators

Given the complexity of biodiversity there is no easy answer on how to do this. Individual indicators provide only very specific perspectives on changes in components of biodiversity at the level of ecosystems, species and genes.

Very few indicators are available with good Europe-wide coverage for assessing these trends.

Also, many indicators selected in the SEBI set were not originally devised to measure progress towards a biodiversity target (for example, nitrogen balance, deadwood etc.). The fact that post 2010 targets are more specific and in many cases better linked to drivers will make the problem of making sound conclusions based on a varied set of indicators probably less difficult.

5.3. Building reliable indicators and drawing sound conclusions from them

Monitoring, models, targets, baselines and critical levels are elements supporting any indicator. In practice they are treated as separate entities because they are often developed by different people working in different fields and for different purposes (key monitoring programs in many cases by NGOs; models, baselines and critical levels by scientists; indicators and targets by policymakers or governmental institutions). Development and interpretation of indicators are often hampered by lack of one or more of these elements or by lack of coordination between the elements.

**Monitoring** is a major concern. For several indicators, this is due to non-standardised or incomplete data, or a serious lack of geographical coverage. The monitoring of state indicators is slowly improving. Threats, goods (such as fish and timber) and some responses are reasonably well-monitored as part of the well-developed socio-economic and environmental monitoring. Services are hardly monitored, partly because they are still ill-defined. SEBI welcomes the ongoing work on developing indicators for ecosystem services.

**Models**: Apart from a few exceptions, models which link indicators of threats, state, use and response have received little attention and have been hardly developed.

**Targets**: The general 2010 target of halting biodiversity loss applies to the indicators of the state of biodiversity. Targets for the indicators of pressure, goods and services and their sustainable use were lacking. The new sub-targets envisioned in the EU Biodiversity Strategy 2011-2020 are more concrete and specific.

**Baselines**: There are various approaches to define a baseline for one indicator. A current state can be assessed by comparing it with: i) a particular reference year; or (ii) a particular reference state that is, for example, a critical value or an intact or natural state. Reference state or critical values are largely absent for most indicators in the (pre-2010) focal areas on ecosystem integrity and sustainable use

5.4. Interpreting  indicators - make assumptions explicit

An indicator is defined by specific spatial and temporal scales, a baseline, and an assessment principle. However, these are often not mentioned explicitly. The SEBI set contains different spatial scales, assessment principles, baselines and time ranges. Only a few critical levels are available. This may impede clear policy interpretation of the indicators.

The following definitions and proposals could help increase clarity for the future set of indicators to be used:

- A clear distinction must be made between assessment principles, baselines, critical levels and targets.

- An assessment principle is the basic view on which change is evaluated. The suitability of these assessment principles can be judged according to different criteria: policy relevance; ecosystem relevance; meaningfulness; feasibility; sensibility; and fairness.

- A baseline is an element of the assessment and helps to interpret the indicator. Unfortunately the baseline value is often driven by data availability.

- A critical level is a value, exceeding of which may provoke (for example) a population or ecosystem collapse or cause irremediable pollution. Estimation of these values requires additional research.

- A target is a political choice, balancing socio-economic and ecological interests, and is set somewhere between zero and the baseline. Scientific knowledge can help to define feasible and realistic targets.

- An indicator can be read according to different assessment principles. Therefore baselines and assessment principles for a set of indicators should be selected in advance and in a coherent way. Each indicator should be accompanied by a clear indication of how the absolute level and change, respectively, should be interpreted.

More detailed discussion of methodological lessons learned through the use of the individual indicators as well as the set as a whole will be published as an EEA Technical Report in 2012.

**Annex: The 26 indicators agreed by the SEBI 2010 process**

| CBD focal area | EU Headline Indicators | Indicator proposed for inclusion in the first European set |
|---|---|---|
| Status and trends of the components of biological diversity | Trends in the abundance and distribution of selected species | 1. Abundance and distribution of selected species |
| | Change in status of threatened and/or protected species | 2. Red List Index for European species |
| | | 3. Species of European interest |
| | Trends in extent of selected biomes, ecosystems and habitats | 4. Ecosystem coverage |
| | | 5. Habitats of European interest |
| | Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socioeconomic importance | 6. Livestock genetic diversity |
| | Coverage of protected areas | 7. Nationally designated protected areas |
| | | 8. Sites designated under the EU Habitats and Birds Directives |
| Threats to biodiversity | Nitrogen deposition | 9. Critical load exceedance for nitrogen |
| | Trends in invasive alien species (Numbers and costs of invasive alien species) | 10. Invasive alien species in Europe |
| | Impact of climate change on biodiversity | 11. Occurrence of temperature-sensitive species |
| Ecosystem integrity and ecosystem goods and services | Marine trophic index | 12. Marine Trophic Index of European seas |
| | Connectivity/ fragmentation of ecosystems | 13. Fragmentation of natural and semi-natural areas |
| | | 14. Fragmentation of river systems |
| | Water quality in aquatic ecosystems | 15. Nutrients in transitional, coastal and marine waters |
| | | 16. Freshwater quality |
| Sustainable use | Area of forest, agricultural, fishery and aquaculture ecosystems under sustainable management | 17. Forest: Growing stock, increment and fellings |
| | | 18. Forest: Deadwood |
| | | 19. Agriculture: Nitrogen balance |
| | | 20. Agriculture: Area under management practices potentially supporting biodiversity |
| | | 21. Fisheries: European commercial fish stocks |
| | | 22. Aquaculture: Effluent water quality from finfish farms |
| | Ecological Footprint of European countries | 23. Ecological Footprint of European countries |
| Status of access and benefits sharing | Percentage of European patent applications for inventions based on genetic resources | 24. Patent applications based on genetic resources |
| Status of resource transfers and use | Funding to biodiversity | 25. Financing biodiversity management |
| Public opinion (additional EU focal Area) | Public awareness and participation | 26. Public awareness |