THE CASE FOR BIODIVERSITY INDICATORS FOR THE EU OVERSEAS[1]

A Policy Brief prepared within the EU FP7 NetBiome-CSA project (GA 603710) in partnership with the European Environment Agency Negotiated procedure EEA/NSV/14/005

Why does biodiversity matter?

The internationally accepted definition of biodiversity was established in the 1992 Convention on Biological Diversity[2]: 'Biological diversity' means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.

According to the EU 2020 Biodiversity Strategy[3], biodiversity is in crisis. "In the EU, only 17 % of habitats and species and 11 % of key ecosystems protected under EU legislation are in a favourable state". Key drivers of biodiversity loss (such as habitat change, overexploitation of natural resources, the introduction and spread of invasive alien species and climate change) are recognized to have increased, offsetting the positive effects of actions to stem biodiversity loss.

Biodiversity is not only important in its own right, it also provides society with a wide range of ecosystem services upon which we depend. These have been classified by the Millennium Ecosystem Assessment (MA) 2005 report[4] in four categories:

- Supporting services, which are necessary for the production of all other ecosystem services.
- Provisioning services, referring to all the products obtained from ecosystems, including food (cultivated and wild), raw materials, water and energy.
- Regulating services, benefits obtained from the regulation of ecosystem processes, such as climate regulation, waste decomposition, purification of water and air.
- Cultural services, nonmaterial benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation, and aesthetic experiences.

What is an indicator and why do we need them?

An indicator is "a measure based on verifiable data that conveys information about more than itself"[5]. They are purpose dependent – the interpretation or meaning given to the data depends on the purpose or issue of concern.

Biodiversity indicators provide information relevant to management plans and policy decisions leading to halting the loss of biodiversity and the degradation of ecosystem services, or maintaining and/or restoring biodiversity and ecosystem services.

National and regional governments use biodiversity indicators to guide the establishment of policies for conservation and sustainable use of biodiversity, seek support and justification for their decisions, report on the impact of their policies, and track progress towards global and national targets. In the European context these are given by the 6 targets established in the EU 2020 Biodiversity Strategy, building from a vision for 2050.

[1] Referring to the European Outermost Regions (ORs) and the Overseas Countries and Territories (OCTs).

[2] https://www.cbd.int/doc/legal/cbd-en.pdf

[3] See updates on http://ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm

[4] http://www.unep.org/maweb/en/about.aspx

[5] Guidance for national biodiversity indicator development and use. 2010 BIP & UNEP-WCMC, Cambridge, UK

EU 2050 vision
By 2050, European Union biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity's intrinsic value and for their essential contribution to human well-being and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided.
EU 2020 headline target
Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss.

What biodiversity indicator initiatives are there?

At the global level, two main initiatives are being developed.

- The Biodiversity Indicators Partnership (BIP) [6] is a global initiative mandated by the Convention of Biological Biodiversity (CBD) to promote and coordinate development and delivery of biodiversity indicators in support of the CBD, Multilateral Environmental Agreements (MEA), Intergovernmental Platform on Biodiversity & Ecosystem Services (IPBES), national and regional governments and a range of other sectors. It has established a set of global indicators and is promoting the implementation of national indicators.
- The Group on Earth Observation's Biodiversity Observation Network (GEO BON), on the more technical side, is developing a set of Essential Biodiversity Variables (EBVs)[7] to facilitate the harmonization of existing monitoring schemes and guide the implementation of new ones, especially in gap areas where information on biodiversity change is still very sparse.

At the EU level, the Streamlining European Biodiversity Indicators (SEBI) 2010 partnership led by the European Environment Agency (EEA) established a first set of indicators to address the EC target of halting the loss of biodiversity by 2010[8]. One of the principal working methods of SEBI is to build on current monitoring and available data to avoid duplication of efforts and to complement and not replace other activities to describe, model and understand biodiversity and the pressures upon it. At present, SEBI is being restructured to measure progress towards the new European and global 2020 biodiversity targets[9].

So, why do we need biodiversity indicators specific for EU Overseas?

The EU Overseas have biological, geographical and social specificities which merit special attention and for which existing indicators may be inadequate, insufficient or too general.

- Dispersed across the globe, EU Overseas are located in diverse geographical settings and encompass a multitude of habitats and ecosystems not found on continental Europe, such as tropical rain forests, mangroves and coral reefs. The monitoring of these fragile habitats may be neglected if they are not object of targeted consideration.

[6] http://www.bipindicators.net/about

[7] See Pereira, H. M. *et al*., 2013. Essential biodiversity variables. *Science*, 339(6117), 277-278.

[8] See SEBI Technical report No 11/207, Halting the loss of biodiversity by 2010: proposal for a first set of indicators to monitor progress in Europe, available at http://www.eea.europa.eu/publications/technical_report_2007_11

[9] See SEBI Technical report No 11/2012, Streamlining European biodiversity indicators 2020: Building a future on lessons learnt from the SEBI 2010 process, available at http://www.eea.europa.eu/publications/streamlining-european-biodiversity-indicators-2020

- Most of the EU Overseas are isolated islands, where native species have undergone complex evolutionary processes leading to a degree of endemism unknown in continental areas. The small area of distribution of endemic species and their habitats makes them much more susceptible to outside threats, like overexploitation by humans or the effects of invasive species. Therefore, the distribution of (endemic) species has to be monitored at much finer temporal and spatial scales, employing system-level indicators for the total endemic species or species-specific indicators for single species considered under threat.
- The socio-economic context of EU Overseas makes them extremely dependent on local biological resources and ecosystem services, and much more susceptible to climate change. Issues like soil erosion, water availability or sea level rise have a seriousness in many of the ORs and OCTs that has no parallel on the continent.
- The implementation on ORs and OCTs of European policy models and funding strategies designed for continental contexts may be ineffective or even detrimental.

These specific needs require specific policies and specific indicators to monitor them. Biodiversity indicators (and also socio-economic indicators) specific for EU overseas would raise awareness at the European level and help guide the establishment of policies for conservation and sustainable use of biodiversity in the EU overseas, hence contributing to support regional and local conservation and management needs, and to develop capacities and regional cooperation.

The critical need for establishing "long-term monitoring programmes as well as biological and socio-economic indicators adapted to the constraints specific to the ORs and OCTs" was already recognized in the Message from Reunion Island (July 2008) [10]. The EU 2020 Biodiversity Strategy specifically invites Member States to "work with the outermost regions and overseas countries and territories (…) through the BEST initiative to promote biodiversity conservation and sustainable use". More recently, the message from Guadaloupe (Nov. 2014) [11] includes indicator based operational actions to tackling biodiversity loss: "Develop common indicators for the ORs/OCTs based on Environment Action Plan indicators, building on local initiatives, indicators, and available data, ensuring the necessary resources to collect any additional data, and establishing a reporting system for the EU on ORs/OCTs biodiversity status. Develop more data on indicators of the status of habitats and taxa of high ecological value".

What are the ongoing efforts that are taking place to establish sets of biodiversity indicators specific for EU Overseas?

Despite the need for biodiversity indicators[12], to date no joint monitoring programmes have been set up. National initiatives, however, are underway in France and the UK. In the context of the French national monitoring programme, conducted by the "Observatoire National de la Biodiversité"[13] in partnership with the "Fondation pour la recherche sur la Biodiversité" [14], indicators specific to Overseas territories have been identified. At the UK, work is also being conducted to elaborate biodiversity indicators for the UK OCTs.

Given the international scope of the endeavour, capitalizing and creating synergies between related projects and initiatives is crucial to avoid duplicating efforts. Currently two project are initiatives are taking place to identify sets of indicators for the EU Overseas:

- The European Environment Agency Negotiated procedure EEA/NSV/14/005 organized an expert meeting in October 2014 to select indicators for the EU Overseas based on existing European

[10] http://cmsdata.iucn.org/downloads/080711_reunion_msg_en_1.pdf

[11] http://www.uicn.fr/IMG/pdf/Message_de_la_Guadeloupe_version_anglaise.pdf

[12] Heink, U., & Kowarik, I., 2010. What criteria should be used to select biodiversity indicators? Biodiversity and conservation, 19(13): 3769-3797.

[13] http://indicateurs-biodiversite.naturefrance.fr/

[14] http://www.fondationbiodiversite.fr/

indicators and carried out a scoping/feasibility study on a common set of indicators specific to Europe's overseas. At present, some of the 26 indicators are being updated.

- The EU FP7 funded NetBiome-CSA project identified four pressing biodiversity challenges faced by the ORs and OCTs, based on transregional dialogues with stakeholders from various EU ORs and OCTs. The challenge "Sustainable management and effective conservation of biodiversity" focuses on biodiversity indicators for the EU Overseas. Activities have resulted in the present policy brief and in research recommendations.

What future steps are needed to establish common sets of biodiversity indicators specific for EU Overseas?

Building and maintaining common sets of EU Overseas biodiversity indicators (including coordination in the conceptualization, application, and testing) will require enhanced cooperation and integration of indicators across the fields of biodiversity, ecology, social sciences, economy, and environmental policy. For this, technical and political support at the local, national, regional and European levels is a pre-requisite as it will help to develop synergies between ongoing initiatives, mobilize expertise and make financial resources available.

The exact steps of the roadmap will depend whether existing indicators are suitable or can be adapted to the specific needs of the EU Overseas (Option 1) or need to be newly developed (Option 2). These options are not exclusive as both may be necessary.

Option 1 – Build upon existing biodiversity indicators

1. Describe (present and previous) local biodiversity and ecosystem services.
2. Identify a set of indicators from existing global or European indicators that is relevant to convey information about the current state and future development of biodiversity and ecosystem services.
3. Carry out a consultation process and define the (mutually) desired state of biodiversity and ecosystem services.
4. Evaluate suitability of the identified indicators for the EU Overseas through feasibility studies.
5. Adapt indicators where necessary.
6. Implement the sets of indicators through directives.
7. Test indicators in certain intervals since they may lose their effectiveness over time.

Option 2 – Develop new sets of biodiversity indicators

1. Set up long-term research projects and build institutional and human capacity.
2. Carry out science-based monitoring programs.
3. Describe (current and previous) local biodiversity and ecosystem services.
4. Model data and build indicators that are relevant to convey information about the current state and future development of biodiversity and ecosystem services.
5. Carry out consultation process and define the (mutually) desired state of biodiversity and ecosystem services.
6. Assess the relevance of indicators through monitoring.
7. Implement the sets of indicators through directives.
8. Test indicators in certain intervals since they may lose their effectiveness over time.

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