Official statistics for decision making: an environmental accounting case study related to biodiversity

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Abstract. *Decision-makers' increasing awareness of biological resources' importance for humanity's economic and social development has driven the inclusion of biodiversity among the main topics dealt with by official statistics, thus enabling an extension of traditional analyses based on social and economic data to cover crucial environmental and sustainability aspects. Within official statistics, environmental-economic accounts can play a specific role in supporting initiatives stemming from the UN Convention on Biological Diversity (CBD). Together with core national accounts, environmental accounting is involved even directly in the implementation of the Aichi Biodiversity Targets (ABTs) agreed upon in the context of the Strategic Plan for Biodiversity 2011-2020: according to ABT2, biodiversity values are to be incorporated into reporting systems and into national accounting as appropriate. In particular, data for monitoring the mobilization of financial resources for the implementation of this Strategic Plan as well as for assessing resource needs are of interest according to ABT20. For these purposes, data derived from official statistics' environmental accounting on actual expenditure for biodiversity protection have special merits, due to their high quality and to the fact that they are linked to core national accounts data and hence particularly suitable for use in modelling. On the other hand, while policies can easily be developed by committing financial flows to given purposes, monitoring the same policies based on information on actual utilization of money may not be that easy from politicians' viewpoint. The use of data on funding vs data on actual expenditure may be an issue.*

Keywords. *Environmental-economic accounts; environmental protection expenditure; protection of biodiversity.*

1 Introduction

Statistical information is crucial for decision making: it enables to identify key areas where actions are required and, if correctly interpreted, allows decision-makers to respond to the real needs of a community. Statistics can also help the general public to monitor and evaluate the performance of politicians and decision-makers.

On the impulse of a wide-spread concern about human impacts on ecosystems and biological diversity, the demand for statistics on phenomena related to biodiversity has been increasing during the last decades.

Biological diversity has emerged as a fundamental part of the move towards sustainable

development, and its conservation and the sustainable use of its components are on the diplomatic agenda. The United Nations adopted in 1992 the Convention on Biological Diversity (CBD), the first global, comprehensive agreement to address all aspects of biological diversity. Inspired by the world community's growing commitment to sustainable development, CBD recognizes, for the first time, that the conservation of biological diversity is "a common concern of humankind" and an integral part of the development process. Given a general lack of information and knowledge regarding biological diversity, CBD highlights the urgent need to develop scientific, technical and institutional capacities to provide the basic understanding upon which to plan and implement appropriate measures. For the implementation of CBD the Strategic Plan for Biodiversity 2011-2020 (SPB) is currently in place, providing goals and specific targets aimed to better preserve and protect natural resources with sustainable management. One important process in this context is known as "Biodiversity Resource Mobilization" (BRM). Of course, there is a need of statistical information suitable for the purposes of CBD, including BRM. The so-called Aichi Biodiversity Targets (ABTs), agreed upon in this context, include this aspect as well: according to ABT2, biodiversity values are to be incorporated into reporting systems and into national accounting as appropriate; in particular, data are needed for monitoring the mobilization of financial resources for the implementation of the strategic plan as well as for assessing resource needs (ABT20[1]).

Biodiversity is being taken into account more and more not only from an ecological viewpoint but also as far as related economic and social aspects are concerned. There is a growing consensus that biodiversity is fundamental to economics, as witnessed e.g. by the global initiative TEEB[2]. A specific kind of information which is relevant to support action for the conservation of biodiversity is then one that links ecological and economic aspects. Suitable data for such linkages is provided by environmental-economic accounts.

2 Environmental-economic accounts: an international statistical standard with a legal base in the EU

Within official statistics the interaction between economy and environment is described by means of accounts that are satellites to the national accounts as well as other statistics that consider both environmental and economic aspects at the same time. Environmental-economic satellite accounts link the environmental and economic dimensions based on a system approach. This is done according to SEEA[3], an overarching international framework based on the same basic principles, definitions and classifications of the core system of national accounts, thus allowing proper linkages with economic accounting data[4]. SEEA is a framework to organize data for the derivation of coherent indicators and descriptive statistics to monitor the contribution of the environment to the economy and the impact of the economy on the environment, as well as the state of the environment. It is developed in a way that the different domains of the environmental debate can be suitably covered by statistics produced according to its guidelines. Biodiversity is one of such domains; one specific SEEA module provides data on expenditures for the protection of biodiversity, which is of particular importance in relation to ABT20 mentioned above.

The UN Statistical Commission (UNSC) endorsed SEEA following a request from Agenda 21[5]. In

[1] ABT20 reads: "By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.".
[2] http://www.teebweb.org/.
[3] System of System of Environmental-Economic Accounting 2012.
[4] SNA 2008 (http://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf).
[5] UN Agenda 21, the action plan adopted at the Earth Summit held in Rio de Janeiro in 1992 for implementation worldwide, is at the origin of SEEA. It was Agenda 21 that called for the development of integrated environmental-economic accounting from different perspectives, including official statistics as well as corporate reporting.

particular, the SEEA Central Framework (SEEA-CF) - one component of SEEA - has been adopted by UNSC as an international statistical standard, similarly to SNA, the above mentioned core system of national accounts. Thanks to the consistency of SEEA with SNA, the trade-offs of policy-makers' economic decisions affecting natural resources and associated services can be made explicit.

SEEA Experimental Ecosystem Accounting (SEEA-EEA) - another component of SEEA[6] - deals with biodiversity aspects more in depth as compared to SEEA-CF. The former is not an international standard, but complements the latter by providing methodological guidelines for accounts focused on ecosystems. It is two modules of SEEA-CF, however, that provide proper accounting tools to describe the relevant expenditures: EPEA[7] and ReMEA[8]. These two modules are being systematically produced in most EU member countries.

In fact, a legal base has been established in EU for mandatory production of national environmental-economic accounts in line with SEEA: Regulation of the European Parliament and of the Council on European environmental economic accounts (No 691/2011), amended by Regulation No 538/2014[9]. This legal base provides methodology, common standards, definitions, classifications and accounting rules for compiling accounts that are given highest priority in EU according to the European Strategy for Environmental Accounts (ESEA)[10]. The second Regulation mentioned above provides the legal base for the module "Environmental protection expenditure accounts", which is particularly relevant for the calculation of economic resources devoted by resident units to environmental protection, including for conservation of biodiversity.

3 Monitoring conservation of biodiversity: data on funding vs data on actual expenditure

With connection to the EU Biodiversity Strategy to 2020[11], EU member countries have developed a system of indicators – namely the Streamlining European Biodiversity Indicators (SEBI) - which are supposed to be used for monitoring the implementation of the same strategy and, in a global perspective, also the attainment of the corresponding ABTs[12].

In the above context, one indicator is intended to assess how much public funds are being committed to conservation of biodiversity: SEBI 025 - "Financing biodiversity management". One main limit of this indicator has emerged in practice: it only contains information from EU funding; furthermore only funding of projects using the LIFE financial instrument for the environment is considered, while European funding benefiting biodiversity may also be included, though not explicitly, in budget lines within other policy areas, e.g. agriculture, rural development and research.

Beyond shortcomings which any given indicator may show at a given stage of its development, the case of SEBI 025 suggests a reflection on which kind of data could serve as an optimal indicator for monitoring expenditure, in particular for conservation of biodiversity as in the case at study. In general terms the issue is whether, for monitoring decision making processes, data on funding would be better suited than data on actual expenditure or vice-versa.

[6] One more component of SEEA is Applications and Extensions (of the SEEA). So-called subsystems of the SEEA framework have also been developed in order to elaborate on specific resources or sectors, e.g. Energy, Water.
[7] Environmental Protection Expenditure Account.
[8] Resource Management Expenditure Account. In SEEA-CF this module is envisaged, though not actually developed in operational terms.
[9] This regulation adds three new modules to those initially introduced by the first Regulation in 2011.
[10] The legal base is supposed to be further extended to cover more modules, also in accordance with ESEA.
[11] http://ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm.
[12] In fact, the indicators at issue are aimed to link the global framework set by the CBD with regional and national indicator initiatives.

Italy is a country extremely rich in biodiversity - due to its territory with remarkable differences in climate, topography and geology - and is strongly committed to the implementation of its strategies related to biodiversity: National Biodiversity Strategy and National Strategy for Resource Mobilization, both linked to CBD and related SPB and ABT20 mentioned above. Estimates on actual national expenditure for conservation of biodiversity are regularly produced in Italy by Istat according to EPEA and ReMEA mentioned above. Two specific environmental domains covered in these accounts are relevant in relation to ABT20: "Protection of biodiversity and landscapes" and "Management of wild flora and fauna"[13]. Like all figures delivered by Istat, expenditure estimates referred to these domains are produced in compliance with the European Statistics Code of Practice[14].

In principle, these official statistics can be used for assessing financial resource needs as well as for calculating the resources made available, in order to support studies useful for the purposes of CBD, if not to contribute to the assessments of economic efforts carried out for the conservation of biodiversity implicitly required by ABT20. However, also due to the fact that actual national expenditure is not calculated all over the world on a regular basis and consistently with EPEA, this kind of data does not seem to enter international negotiations for conservation of biodiversity. On the other hand it may also be relevant that, while policies can easily be developed by defining the financial flows to be committed to given purposes, from politicians' viewpoint it may be not equally straightforward to monitor the same policies by using information on actual utilization of money.

4 Concluding remarks

As in other international processes, there may be good reasons in the "Biodiversity Resource Mobilization" process for understanding resource mobilization just as funding. At least, policies can easily and significantly be developed by committing financial flows to given purposes, while it is less easy to monitor their implementation and effectiveness in terms of actual expenditure. However, actual utilization of the financial resources committed to CBS's purposes does matter as well, because eventually efforts and activities actually carried out to protect biodiversity is what really matters.

The usefulness of official statistics derived from SEEA and SNA seem to be out of discussion, nevertheless, at least because national accounting is mentioned in ABT2. Such statistics, furthermore, would be useful for assessing resource needs as politicians might want to take an informed decision to change ABT20 as envised in the target itself.

References

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[2] European Commission, International Monetary Fund, OECD, United Nations, World Bank (2009). System of National Accounts 2008, New York.

[3] United Nations (1992), Convention on Biological Diversity (http://www.cbd.int/).

[4] The Economics of Ecosystems and Biodiversity (http://www.teebweb.org/).

[13] "Protection of biodiversity and landscapes" is item 6 of the European standard statistical Classification of Environmental Protection Activities and Expenditure (CEPA), used in EPEA and ReMEA and adopted in the above mentioned Regulation No 538/2014. "Management of wild flora and fauna" is item 12 of the Classification of Resource Management Activities (CReMA), used in ReMEA and adopted in the same Regulation for compiling statistics on the Environmental Goods and Services Sector.

[14] Mandatory quality assurance procedures are regularly carried out.