UNEP

Convention on Biological Diversity

SUBSIDIARY BODY ON SCIENTIFIC,
  TECHNICAL AND TECHNOLOGICAL ADVICE
Seventeenth meeting
Montreal, 14-18 October 2013
Item 3 of the provisional agenda*

THE IDENTIFICATION OF SCIENTIFIC AND TECHNICAL NEEDS FOR THE ATTAINMENT OF THE TARGETS UNDER STRATEGIC GOAL A OF THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020

Note by the Executive Secretary

I. INTRODUCTION

1.   In paragraph 1 of decision XI/13 B, the Conference of the Parties requested the Executive Secretary to prepare information on:

(a)   Scientific and technical needs related to the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets;

(b)   Existing policy support tools and methodologies developed or used under the Convention and their adequacy, impact and obstacles to their uptake, and gaps and needs for further development of such tools and methodologies;

(c)   The adequacy of observations, and of data systems, for monitoring the biodiversity attributes addressed in the Aichi Biodiversity Targets; and

(d)   Options for assessing the effects of the types of measures taken in accordance with the provisions of the Convention;

and to report on progress on these matters to a meeting of the Subsidiary Body prior to the twelfth meeting of the Conference of the Parties.

2.   Accordingly, the Executive Secretary, through notification SCBD/STTM/DC/ac/81207 (2013-005) of 21 January 2013, invited the views of Parties and relevant organizations on these issues.

3.   Eleven Parties (Argentina, Australia, Bolivia, Bulgaria, Canada, China, Colombia, Mexico, the European Union, France and the United Kingdom) and eight organizations (BirdLife, Conservation International, the Global Biodiversity Information Facility (GBIF), the Group on Earth Observations Biodiversity Observation Network (GEO-BON), the International Union for Conservation of Nature

---

* UNEP/CBD/SBSTTA/17/1.

(IUCN), the Japan Civil Network for the United Nations Decade on Biodiversity, the Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), and the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC)) responded to this notification.

4.   The present note, prepared on the basis of these and other inputs, contains for each target under Strategic Goal A of the Strategic Plan for Biodiversity 2011-2020: general observations and considerations regarding the adequacy of policy support tools; the adequacy of data, observations and indicators; and the effects of the types of measures taken in accordance with the provisions of the Convention on Biological Diversity; and on that basis draws conclusions on scientific and technical needs related to the implementation of the Strategic Plan and to each of these targets.

5.   A draft of this note was subjected to peer review from 27 June to 15 July 2013. Comments from 20 Parties (Canada, Cook Islands, European Union, Fiji, Guatemala, Japan, Kiribati, Marshall Islands, Mexico, Micronesia (Federated States of), Nauru, Nepal, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu) and two organizations (Food and Agriculture Organization of the United Nations and the International Union for Conservation of Nature) were received and are reflected in this note.[1]

II.   SCIENTIFIC AND TECHNICAL NEEDS FOR THE ATTAINMENT OF THE TARGETS UNDER STRATEGIC GOAL A

Target 1: By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

1.1   Elements of Target 1

6.   Addressing the direct and underlying drivers of biodiversity loss will ultimately require behavioural change by individuals, communities, organizations, industries, businesses and governments. Understanding, awareness and appreciation of the diverse values of biodiversity underpin the willingness of individuals to make the necessary changes and actions to address these drivers. Greater awareness of the values of biodiversity also allows individuals and governments to assess more accurately the trade-offs of their actions and decisions. Meeting this target requires that people are aware of the values of biodiversity as well as of the actions they can take to conserve and sustainably use biodiversity and of their contribution to sustainable development.

7.   In order to progress towards this target, Parties will need to develop and implement coherent, strategic and sustained communication, education and public awareness efforts, alone and in partnership with other actors. There are a variety of communication and outreach vehicles which can be used to attain this target. Different types of education and public awareness activities or campaigns, including social marketing techniques, will be needed to reach different audiences, as activities and messages which are effective for one group may not be for others. Such activities will help to mainstream biodiversity across society. There are multiple avenues for increasing awareness of biodiversity. These include formal learning through schools and universities, informal learning both at home and at the local community level, and non-formal learning at museums, botanical gardens, zoos, aquariums, and parks, as well as awareness that is generated from exposure to material on biodiversity featured on television and radio, in print publications, and on the internet and social media. Awareness and learning also occurs through participation in events and other opportunities for information exchange between stakeholders.

---

[1] Comments were provided by experts in their individual capacity. 14 Pacific Island States made a joint submission prepared at the margins of the Regional Workshop for the Pacific Countries on the Preparation of the Fifth National Report (Nadi, Fiji, 22-26 July 2013).

> **1.2   *Existing policy support tools and methodologies, their adequacy, impact, obstacles to their uptake, and gaps***

Policy support tools and methodologies to help achieve Aichi Biodiversity Target 1

8.   Under the Convention on Biological Diversity the programme of work on communication, education and public awareness (CEPA) provides the main framework for action towards this target. The programme, which relates to Article 13 of the Convention, provides a framework for national action on education and public awareness, both in the short and long term, and a number of education and public awareness resources have been developed to support its implementation. For example, several tools linking biodiversity awareness to education for sustainable development have been developed, such as the UNESCO-CBD Biodiversity Learning Kit. Similarly, the Secretariat, in collaboration with the Youth and United Nations Global Alliance and the Food and Agriculture Organization of the United Nations, has developed a Youth Guide to Biodiversity.

9.   Toolkits have also been developed by the Secretariat in collaboration with other actors at the national, regional and international level. Examples of these include the CEPA toolkit (developed in partnership with IUCN's Commission on Education and Communication), the CEPA Evaluation Design Toolkit, the Islands Communication Toolkit (developed in partnership with Global Island Partnership) and the ABS Strategic Communication toolkit (developed by the ABS Capacity Development Initiative). Zoos and aquariums, botanical gardens and museums of natural history have also developed tools to raise biodiversity awareness. For example, the World Association of Zoos and Aquariums (WAZA) has developed a suite of information materials on species and their habitats and on the actions that individuals can take to protect them.

10.   The annual celebrations of the International Day for Biodiversity on 22 May as well as the United Nations Decade on Biodiversity all represent important tools for raising awareness through activities and celebrations. Organizing celebrations for the International Day for Biodiversity both in urban and rural areas represent opportunities to raise awareness of the values of biodiversity. In addition, a number of organizations and actors have developed methodologies and activities designed to raise awareness through social marketing and behavioural change approaches, founded on social psychology and other social science disciplines. Organizations such as IUCN's Commission on Education and Communication, Rare Conservation, and various private sector marketing firms have also worked to identify and deploy approaches for awareness raising and behavioural change in specific settings.

11.   In addition to the tools noted above, national clearing-house mechanisms are also important tools. Clearing-house mechanisms allow for information to be shared with multiple stakeholders and to keep them informed of biodiversity issues within a country.

12.   Relevant tools have also been developed at the national level. For example, Mexico has developed a DVD on didactic tools on biodiversity, a learning toolkit on gender and risk management for biodiversity conservation and a portal for children 8 to 12 years old on the value of biodiversity.

The application of existing policy support tools and methodologies

13.   The toolkit on CEPA and strategic communication has been used in the context of capacity-building workshops around the world. Similarly, there are an increasing number of countries and organizations organizing and participating in events related to the International Day for Biodiversity. Japan also has been conducting public opinion surveys to assess the degree of awareness of the word "biodiversity".

14.   Precise data on the deployment of all the various tools noted above is not available. However, in its 2013 edition of the Biodiversity Barometer, the Union for Ethical BioTrade found that biodiversity awareness has been slowly growing.

Obstacles to the use of existing policy support tools and methodologies

15.   The majority of these tools are general in nature, and are meant to act as guidance and templates for specific activities at regional and national levels. To date, their adaptation to national circumstances and conditions has been uneven. Further implementation of these support tools remains an expensive exercise and to date there have been limited resources devoted to their use.

Gaps in policy support tools and methodologies

16.   There has been limited assessment of the impact of existing policy support tools and methodologies. However, the information available suggests that there are several important gaps in the existing suite of policy support tools and methodologies related to this target. Tools and methodologies for coherently monitoring or assessing levels of awareness at the global scale are limited, as are methods of determining which key stakeholders should be targeted by communication and public awareness efforts. Further, tools and methods to translate increased awareness into behavioural change are also limited, as are tools for communicating the impacts of individual actions on biodiversity.

1.3   The adequacy of observations, and of data systems, for monitoring the biodiversity attributes addressed in Aichi Biodiversity Target 1 and the use and development of indicators for the target

Ability to assess/measure the status of progress towards the target at global, regional, national and subnational levels

17.   The following operational indicators were identified in the annex to decision XI/3 A:

(a)   Trends in awareness and attitudes to biodiversity;

(b)   Trends in public engagement with biodiversity;

(c)   Trends in communication programmes and actions promoting social corporate responsibility.

18.   Under the first of these indicators, some 80 biodiversity awareness surveys, commissioned by governmental departments, non-governmental organizations, corporations, and academic institutions, were identified, including ten that were repeated at least once. These provide a good basis for assessments of trends in awareness about biodiversity in the countries concerned. Additional surveys are likely to be conducted by Parties and others to complement those already carried out. One example of a repeat survey is the Union for Ethical BioTrade (UEBT) Biodiversity Barometer, which has been conducted four years in a row (2009-2013), with surveys carried out in 11 countries representing a large proportion of the world's population.[2]

19.   With regards to public engagement with biodiversity, some countries have information on public volunteering efforts and on membership in biodiversity-related organizations.[3] The World Association of

---

[2] For technical details see http://www.bipindicators.net/biodiversitybarometer.

[3] For example see the indicator on "Taking action for nature: volunteer time spent in conservation in the UK" in *UK Biodiversity Indicators inYour Pocket 2012* (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/85754/BIYP_2012.pdf).

Zoos and Aquariums has begun a worldwide survey of visitors to zoos that may provide relevant data in several regions. With regards to the promotion of social corporate responsibility, an example of an indicator is the tracking of references to biodiversity in major national newspapers and magazines in being undertaken in Japan.[4]

20.   Thus, a number of countries already assess progress towards this target, using a range of methodologies and indicators. While there are, at present, no data sets that are both geographically comprehensive and coherent, these initiatives can contribute to assessments of global progress.

Areas where enhanced monitoring/better data/additional observations/additional indicators would make a significant difference in our ability to monitor progress in order to guide appropriate/targeted action

21.   Though the amount of information regarding people's awareness of biodiversity is increasing, comprehensive data remain limited at the global level. While some national and regional data are available there are significant geographic gaps. In general, information on biodiversity awareness is limited for mega-diverse countries, as well as for African and Asian countries generally.

22.   In the absence of comprehensive global data, participation or membership in wildlife/environment interest groups could also be used as proxies, but methodologies to monitor these would need to be developed. Similarly, data related to admissions to institutions where people come into contact with biodiversity, such as botanical gardens, zoos and aquariums and parks could provide relevant information as well, especially when combined with data on visitors' opinions and views of biodiversity. Information on the number of training and capacity-building events and the number and types of awareness materials produced could also serve as proxies for monitoring progress towards this target. For some regions, such as the small island developing States (SIDS), more appropriate indicators may relate to community engagement and ownership efforts. The involvement of scientific and research organizations with Parties to the Convention may be another indication. With regards to the private sector, increasingly, corporations and businesses are adopting social corporate responsibility practices that include reporting. Information derived from these practices could also possibly provide information on progress towards this target.

Limitations in making these enhancements

23.   The scale of monitoring required to assess people's awareness of the values of biodiversity at the global scale is quite large. Monitoring at smaller scales which could then be scaled up to allow for reasonably accurate conclusions could be undertaken, but would require well-designed surveys of awareness and reporting frameworks to make the data globally relevant and comparable across cultural and language groups. The development of such surveys would require resources as well as a body to undertake the assessment.

1.4   *Assessing the effects of the types of measures taken in accordance with the provisions of the Convention*

24.   Almost all Parties to the Convention have actions in place to raise awareness of biodiversity, as do most United Nations organizations and inter- and non-governmental organizations. The information available suggests that awareness of biodiversity is gradually increasing. Better coordination in the collection and compilation of existing information combined with enhanced efforts to assess trends in awareness of biodiversity would increase our ability to assess the effectiveness of the types of actions taken. More work with the social science community on the role of awareness in promoting change and on the motivations of actors would provide a stronger footing for additional work on this issue. Periodic

---

[4] https://www.cbd.int/doc/world/jp/jp-nbsap-v5-en.pdf.

monitoring of awareness of the values of biodiversity would also allow for baselines and trends in awareness to be assessed.

1.5 *Conclusions from previous sections to enable identification and prioritization of scientific and technical needs related to the implementation of Target 1*

Adequacy of guidance and tools in support of implementation at national level

25. There is a range of guidance which has been developed under the Convention and by a range of other organizations. Existing guidance is likely adequate but additional work to ensure its coherence could be warranted. Further, there is a need for the development of further guidance on how to link awareness of biodiversity generally with awareness of the values of biodiversity and behavioural change. Resources to ensure the adaptation of communication tools and products developed at the global level to national circumstances would help to ensure that existing guidance is used to its full potential.

Adequacy of data and information for monitoring progress at different scales

26. Information is available to track progress in several countries. While there are no comprehensive global data sets, regional and national assessments could provide proxies while more coherent data sets or observation systems are being developed. There are also a number of organizations that are currently developing methods for assessing awareness of biodiversity. As this work progresses, improved and more coherent information on the different aspects of this target will likely become available. In many cases better coordination of resources and existing assessment data would improve our ability to assess progress towards this target.

Effectiveness of actions taken

27. Almost all Parties to the Convention have actions in place to raise awareness of biodiversity as do most United Nations organizations and inter- and non-governmental organizations. The effectiveness of the actions taken depends on a range of factors, including the context in which they are applied.

Summary conclusion

28. Information and guidance on how to raise awareness of biodiversity is fairly well developed, but greater coordination among existing actors would improve this. The further development of methods for translating biodiversity awareness to behavioural change may be needed. Our ability to measure progress towards this target in a globally coherent manner is currently limited.

> **Target 2: By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.**

2.1 *Elements of Target 2*

29. The values of biodiversity are not widely reflected in decision-making, including in the context of development and poverty reduction strategies. The aim of this target is to place biodiversity into mainstream decision-making frameworks so to help give it greater visibility among relevant decision makers. Integrating and reflecting the contribution of biodiversity, and the ecosystem services it provides, in relevant strategies, policies, programmes, and reporting systems is an important element in ensuring that the diverse values of biodiversity and the opportunities derived from its conservation and sustainable

use are recognized and reflected in decision-making. Similarly, accounting for biodiversity in decision-making is necessary in order to limit the unintended negative impacts of development on biodiversity and to highlight the positive contributions of biodiversity to socioeconomic well-being.

30.   Specifically this target relates to the multiple values of biodiversity and requires that these are integrated into national development and poverty reduction strategies and planning processes and that they are reflected in national accounting systems as appropriate and that the values of biodiversity are integrated into reporting systems.

2.2   Existing policy support tools and methodologies, their adequacy, impact, obstacles to their uptake, and gaps

Policy support tools and methodologies to help achieve Aichi Biodiversity Target 2

31.   Integrating the values of biodiversity into planning processes and national accounting and reporting systems first requires Parties to appropriately value biodiversity. In some cases there may be a need to improve bio-physical measurements to enable this to happen. The value that each country attributes to biodiversity is heterogeneous, and therefore comparisons are difficult at the international level. There are a variety of tools available to help assess the values of biodiversity at different levels, including in the private sector.[5] Policy support tools developed under the Convention include the programmes of work on economic, trade and incentive measures as well as pertinent elements in other work programmes and related products[6] including:

        (a)   CBD Technical Series 4 (on forest values), 27 (on valuing wetlands) and 28 (on assessing valuation tools and methodologies) as well as the upcoming volume on valuation of biodiversity of dry and sub-humid lands;[7]

        (b)   Concise guidance in the form of options for the application of valuation tools;

        (c)   Two publications on the values and benefits of protected areas.

32.   In addition to the tools developed under the Convention a number of relevant tools have also been prepared by other organizations and initiatives. Examples of these include:

        (a)   The global studies on The Economics of Ecosystems and Biodiversity (TEEB), in particular the volume on the methodological foundations;[8]

        (b)   TEEB implementation guide for Aichi Target 2;[9]

        (c)   The two volumes on the revised United Nations System of Economic-Environmental Accounting (SEEA) (central framework and experimental ecosystem accounts);

        (d)   Additional tools and guidance developed as part of the Wealth Accounting and the Valuation of Ecosystem Services (WAVES);

---

[5] For example the WBCSD Guide to Corporate Ecosystem Valuation
http://www.wbcsd.org/Pages/EDocument/EDocumentDetails.aspx?ID=104.

[6] See http://www.cbd.int/incentives/tools.shtml.

[7] http://www.cbd.int/doc/publications/cbd-ts-04.pdf, http://www.cbd.int/doc/publications/cbd-ts-27.pdf, http://www.cbd.int/doc/publications/cbd-ts-28.pdf, and forthcoming: http://www.cbd.int/doc/publications/cbd-ts-71.pdf.

[8] http://www.teebweb.org/publications/teeb-study-reports/foundations/.

[9] http://www.teebweb.org/wp-content/uploads/2012/09/AICHI_Target_2.pdf.

(e)　　An implementation strategy for the revised System of Environmental-Economic Accounting is currently under development by the United Nations Committee of Experts on Environmental-Economic Accounting (UNCEEA), and further tools and guidance are expected to be developed under the implementation strategy;

(f)　　The Common International Classification of Ecosystem Services (CICES) offers a structure that links with the framework of the United Nations SEEA and builds on the existing classifications but focuses on the ecosystem service dimension.[10]

33.　　With regards to the integration of biodiversity values into national and local development plans and poverty reduction strategies, the Secretariat of the Convention on Biological Diversity has prepared a biodiversity for development tool box, which contains a number of guides, as well as CBD Technical Series 54 and 55 which explore the links between biodiversity, development and poverty reduction. Further, a range of tools developed by organizations working in the development sector are also relevant to this target.

The application of existing policy support tools and methodologies

34.　　The policy support tools and methodologies that have been developed have helped to increase awareness of the importance of the issues addressed in this target but it is unclear to what extent these tools have been used. However, the number of countries, organizations and businesses willing to work towards incorporating biodiversity into national development plans, planning processes, as well as accounting and reporting systems is increasing. This is evident from the growing list of signatories to the Natural Capital Declaration, launched by the World Bank at the Rio+20 Conference under the Wealth Accounting and Valuation of Ecosystem Services (WAVES) partnership.[11]

Obstacles to the use of existing policy support tools and methodologies

35.　　Reflecting the values of biodiversity in development and poverty reduction strategies and national accounting systems can be a technically challenging task and there are major obstacles to the implementation of the policies, tools and methodologies associated with this target. In many cases there is a need for capacity related to the utilization of existing tools and methodologies for integrating the values of biodiversity into planning processes. Most valuation tools are fairly sophisticated and their effective application requires considerable technical capacity, as well as time and financial resources. Absence of capacity and resources constitute major obstacles. Further, the lack of political will to integrate the values of biodiversity into development and poverty reduction strategies also constitutes a major challenge in some areas. In addition, some of the existing tools and methodologies may not always correspond to the reality of certain countries, hampering their application.

36.　　Appropriate accounting systems need to be established and increased coordination among government ministries and different levels of government may be required. Further, while the tools for integrating the values of biodiversity in national planning processes may be well known by representatives of those ministries that follow the Convention on Biological Diversity, they are likely less know by those government ministries and institutions which deal with issues related to poverty reduction strategies, national planning and national accounting. The importance of mainstreaming is recognized at the national level. However, national planning often tends to be highly sectorial and focused on short-term results.

---

[10] See Haines-Young, R. & Potschin, M. (2013). CICES V4-3 – Report prepared following consultation on CICES Version 4, August-December 2012. EEA Framework Contract N° EEA/IEA/09/003.

[11] At the time of preparation of this report, signatories included 65 Parties to the CBD. See http://www.wavespartnership.org/waves/sites/waves/files/images/NCA%20supporters%20060613.pdf.

Gaps in policy support tools and methodologies

37.   The majority of policy support tools and methodologies related to the valuation of biodiversity have tended to focus on the more economic aspects of biodiversity. While these are important, Aichi Biodiversity Target 2 refers to the range of biodiversity values. As such there is a need to develop tools and methods to recognize the complete range of biodiversity values including its social and cultural importance. The further development of tools and methodologies for the integration of ecosystem and biodiversity into national accounts would be helpful, particularly as the System of Environmental-Economic Accounting is primarily constituted of bio-physical accounts and is hence amenable to different value concepts.

2.3   The adequacy of observations, and of data systems, for monitoring the biodiversity attributes addressed in Aichi Biodiversity Target 2 and the use and development of indicators for the target

Ability to assess/measure the status of progress towards the target at global, regional, national and subnational levels

38.   The following operational indicators were identified in the annex to decision XI/3 A:

        (a)   Trends in number of countries incorporating natural resource, biodiversity, and ecosystem service values into national accounting systems;

        (b)   Trends in number of countries that have assessed values of biodiversity, in accordance with the Convention;

        (c)   Trends in guidelines and applications of economic appraisal tools;

        (d)   Trends in integration of biodiversity and ecosystem service values into sectoral and development policies;

        (e)   Trends in policies considering biodiversity and ecosystem service in environmental impact assessment and strategic environmental assessment.

39.   Information relevant to these headings is becoming available for an increasing number of countries, ecosystem types and sectors. The technical capability to derive measures of biodiversity values, often based on ecosystem services, are maturing to the point that several countries are now implementing some form of "natural capital" in national accounts, and many others are contemplating doing so. A focus to date has been on incorporating the values of provisioning services. Additional efforts are needed to further reflect other important ecosystem services in national accounts. A global database or data set which would allow progress towards this target to be assessed in a comprehensive manner is yet to be developed.

40.   Thus, a number of countries already assess progress towards this target using a range of methodologies and indicators. While there are, at present, no data sets that are both geographically comprehensive and coherent, these initiatives can contribute to assessments of global progress.

Areas where enhanced monitoring/better data/additional observations/additional indicators would make a significant difference in our ability to monitor progress in order to guide appropriate/targeted action

41.   There are a variety of valuation tools which exist, and anecdotal information suggests that these are increasingly being used. More systematic collection of this information could provide a proxy of progress towards this target in the absence of a global indicator. However, information on valuation

studies alone would not allow us to assess the extent to which the values of biodiversity have been integrated into national development strategies and planning processes.

Limitations in making these enhancements

42.   While there are several organizations and initiatives looking at the issue of the integration of biodiversity values, or environmental issues more broadly, into poverty reduction strategies, national planning processes, reporting and national accounting, there is no single lead agency or data set that can be used to monitor progress. The main limitations in gathering such information are the associated costs and existing institutional and human resources capacities. Further, progress in developing indicators or data sets for this target is challenging as the information that would be used generally lies outside of environment ministries.

2.4   Assessing the effects of the types of measures taken in accordance with the provisions of the Convention

43.   A variety of economic and non-economic valuation tools exist to assist Parties in incorporating the values of biodiversity into national development plans, poverty reduction strategies, national accounting and reporting systems. They have been developed, tested and refined over many years. When applied correctly, these tools can measure a wide range of values with considerable precision.[12] However, further work is needed to apply the tools in a greater variety of contexts, to further reflect non-provisioning ecosystem services, and to demonstrate the reliability of the results. The choice of tools depends on which biodiversity values are thought to be most relevant in a particular context. Overall, the increasing reliability of valuation tools has led governments and other stakeholders to apply them more frequently and to give increasing weight in decision-making to the estimates derived from using these methods although the application is uneven across regions.

44.   Despite the increasing efforts to incorporate the values of biodiversity into national planning and accounting processes, these have had, as of now, relatively little impact on biodiversity. There are several reasons for this. To date the actions taken to implement this target have been modest and they have been primarily led by the environment sector. To be truly effective, such efforts will need to be scaled up and more directly involve government ministries dealing with development issues.

2.5   Conclusions from previous sections to enable identification and prioritization of scientific and technical needs related to the implementation of Target 2

Adequacy of guidance and tools in support of implementation at national level

45.   Guidance and tools have been developed by various organizations and several pilot initiatives are already ongoing to further adjust and test them. While the tools are becoming increasingly adequate for assisting countries in taking actions to implement the target there uptake is uneven and generally slow. The continuation and expansion of capacity-building and national accounting projects will be important to speed up the use of such tools. In developing tools and guidance, it is important to adapt the methodologies to specific national circumstances.

---

[12] See CBD Technical Series 28 for a concise overview, and the TEEB conceptual foundations volume for a comprehensive analysis.

Adequacy of data and information for monitoring progress at different scales

46.   Information on the integration of biodiversity values in planning processes, strategies and accounting systems is becoming available for an increasing number of countries. This information, in addition to the information gathered by different organizations working on this issue, enables assessments of progress made at the global level. It also provides a basis for data collection and monitoring at the global level to be done in a more systematic and comprehensive manner.

Effectiveness of actions taken

47.   As this target is largely related to putting in place certain types of processes, the actions that are needed are well known. The effectiveness of actions take to date has been modest.

Summary conclusion

48.   The tools and guidance are in place to allow countries to reach the target; however, the complexity of establishing national development strategies, poverty reduction plans, national accounting and reporting processes, the limited resources to do so and the need to involve multiple sectors of the government in such efforts represent significant obstacles. Our ability to assess progress at the global level is also limited, though the use of case studies and information from initiatives and organizations working on this issue could be used to inform any assessment of progress.

> **Target 3: By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socioeconomic conditions.**

3.1   Elements of Target 3

49.   Changes to subsidies and other incentives that are harmful to biodiversity are required to ensure sustainability and responsible resource management, and this target has implications for incentives that are both harmful and positive for biodiversity. Ending or reforming harmful incentives is a critical and necessary step that would also generate net socioeconomic benefits. Conversely, the creation or further development of positive incentives for the conservation and sustainable use of biodiversity could also help in the implementation of the Strategic Plan for Biodiversity 2011-2020 by providing financial resources or other motives to encourage actors to undertake actions which would benefit biodiversity.

50.   An overarching principle in this target is that any actions taken should be in harmony with the Convention and other relevant international obligations, taking into account national socioeconomic conditions. As such, incentives should contribute to the conservation of biological diversity and the sustainable use of its components, and not negatively affect biodiversity and livelihoods of other countries, and should contribute to sustainable development and the eradication of poverty.

3.2   Existing policy support tools and methodologies, their adequacy, impact, obstacles to their uptake, and gaps

Policy support tools and methodologies to help achieve Aichi Biodiversity Target 3

51.   There are three general types of policy support tools and methodologies relevant to this target. There are tools and methodologies to assist with the identification of incentives that are harmful to

biodiversity, tools for the removal, phasing out or reform of harmful incentives, and tools that relate to the development of incentives which are positive for biodiversity.

52.   Several relevant policy tools and associated guidance material have been developed under the Convention, and in particular under the programme of work on incentive measures:

(a)   Proposals for the design and implementation of incentive measures, as well as proposals for the application of ways and means to remove or mitigate perverse incentives (voluntary interim guidance as per decision VII/18);[13]

(b)   CBD Technical Series 56 presents lessons learned and good practice case studies on incentive measures for the conservation and sustainable use of biological diversity;

(c)   A searchable database on incentive measures is available under the clearing-house mechanism providing online access to case studies and other pertinent information on incentive measures (including valuation) that were submitted by Parties, other Governments and relevant international organizations.[14]

53.   International organizations and initiatives have also prepared analysis and guidance on incentive measures, or have otherwise undertaken work of relevance to this target, including, but not limited to:

(a)   The pertinent agreements of, and current negotiations at, the World Trade Organization, in particular on agricultural and fisheries subsidies;[15]

(b)   The analytical work and associated recommendations of the Organisation for Economic Co-operation and Development (OECD) on environmentally harmful subsidies,

(c)   The UNEP-WWF paper "Sustainability Criteria for Fisheries Subsidies: Options for the WTO and Beyond";[16]

(d)   The work of the Global Subsidies Initiative of the International Institute for Sustainable Development (IISD);

(e)   Various analytical studies on different positive incentive measures, such as the studies of the FAO on payments for ecosystem services in agriculture;[17]

(f)   The TEEB report for national and international policymakers dedicates individual chapters to harmful and to positive incentives, building *inter alia* on the material above.[18]

54.   In addition, some countries have further developed step-by-step guidance tools and analyses at national level.[19] The implementation of this target at the national level may frequently require, as a first step, the mapping of the existing incentives landscape, including subsidies, in order to identify priority

---

[13] See http://www.cbd.int/guidelines/.

[14] See http://www.cbd.int/programmes/socio-eco/incentives/case-studies.aspx.

[15] See Doha ministerial declaration, paragraphs 13 and 28, http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm; and Hong Kong ministerial declaration 2005, http://www.wto.org/english/thewto_e/minist_e/min05_e/final_text_e.htm.

[16] http://www.unep.ch/etb/publications/fishierSubsidiesEnvironment/UNEPWWF_FinalRevi09102007.pdf.

[17] See in particular http://www.fao.org/docrep/010/a1200e/a1200e00.htm and http://www.fao.org/docrep/014/i2100e/i2100e.pdf.

[18] http://www.teebweb.org/publication/teeb-in-national-and-international-policy-making/; chapters 5, 6, and 7.

[19] See UNEP/CBD/COP/11/INF/10.

candidates for elimination, phase-out, or reform. Such an exercise, in the form of a technical study for example, can be seen as a needed tool for successful implementation.

The application of existing policy support tools and methodologies

55.   Agricultural support in OECD countries, as measured by the OECD Producer Support Estimate, has been, in absolute terms, essentially flat in the past years. In conjunction with the increasing shift of policies away from measures that are coupled to requirements to produce,[20] this can be taken as an indication that some (modest) progress in eliminating, reforming or phasing out incentives harmful to biodiversity is being made, and the tools and methodologies enumerated above presumably played a role. With regards to the development of positive incentives there is an increasing amount of attention being focused on this issue. This could perhaps, in part, be attributed to the policy support tools and methodologies which have been developed.

Obstacles to the use of existing policy support tools and methodologies

56.   There are several obstacles to the use of the policy support tools and methodologies related to this target. In some cases, data or information related to harmful incentives is limited, which makes it difficult to put the tools and methods which have been developed into practice. Other obstacles are the resistance that some stakeholders may have to incentive reform, and the limited political will to implement the required actions. Another obstacle is the lack of alignment of public policies across the different sectors within governments. For example, measures to support important economic sectors such as agriculture or fisheries may hamper the reform of incentives harmful to biodiversity. With regards to positive incentives, obstacles to the use of the policy support tools and methodologies include the lack of resources and competition within a government for limited resources. Further, in some countries the development of positive incentives may require the development of new legislation as well as budget allocations. The lack of familiarity of some novel positive incentive measures may delay their take-up. When financial resources are lacking, there may be a need to be creative and forward-thinking to identify non-monetary forms of positive incentives.

57.   Ultimately, any reform of incentive mechanisms will need to involve different parts of government, and will require cooperation across relevant sectors and with the stakeholders impacted by changes to current incentive schemes or mechanisms, and some of these different actors may have competing interests. The sensitivity of discussion related to incentive reform is a major obstacle to the use of the policy support tools and methodologies that have been developed.[21]

Gaps in policy support tools and methodologies

58.   The majority of the guidance that has been developed on the reform, phasing out or elimination of harmful incentives and on the development of positives incentives has tended to focus on economic incentives. However, economic incentives are only one type of incentive. The identification and development of tools or methodologies to address non-economic incentives, such as the impact on incentives of institutions (e.g. land tenure), the capacity to enforce regulation, and the availability of information, could help Parties to undertake actions pertinent to this target.

---

[20] http://stats.oecd.org/Index.aspx?DataSetCode=MON20123_5.

[21] The Conference of the Parties, in decision XI/30 on incentive measures, invited Parties, other Governments and relevant international organizations to submit to the Executive Secretary information on obstacles encountered in implementing options identified for eliminating, phasing out or reforming incentives that are harmful for biodiversity, and requested the Executive Secretary to prepare a synthesis report thereon, for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice. It is expected that this work will be submitted to the eighteenth meeting of the Subsidiary Body.

3.3 The adequacy of observations, and of data systems, for monitoring the biodiversity attributes addressed in Aichi Biodiversity Target 3 and the use and development of indicators for the target

Ability to assess/measure the status of progress towards the target at global, regional, national and subnational levels

59.   The following operational indicators were identified in the annex to decision XI/3 A:

        (a)   Trends in the number and value of incentives, including subsidies, harmful to biodiversity, removed, reformed or phased out;

        (b)   Trends in identification, assessment and establishment and strengthening of incentives that reward positive contribution to biodiversity and ecosystem services and penalize adverse impacts.

60.   There is significant information on subsidies, and incentives more generally, available at least for some sectors at the global level. This information allows for some inferences to be made with regards to the negative impacts of some types of incentive policies on biodiversity. There is also information available on incentives which have positive impacts on biodiversity, although these are not contained in a single data set. Furthermore, work is underway in some parts of the world to develop indicators on environmental accounts that will contribute to this target.

61.   Thus, the elements required for monitoring progress towards this target exist. While there are, at present, no data sets that are both geographically comprehensive and coherent, these elements can contribute to assessments of global progress.

Areas where enhanced monitoring/better data/additional observations/additional indicators would make a significant difference in our ability to monitor progress in order to guide appropriate/targeted action

62.   Increased attention to gathering information related to incentives that are specifically related to biodiversity, as well as the documentation of this information at an adequately centralized level, would enhance our ability to monitor progress towards this target.

Limitations in making these enhancements

63.   The main limitations to enhancing our ability to monitor progress towards this target is the lack of resources and capacity to establish effective mechanisms to gather and catalogue information, and the absence of an organization to undertake this work on a global scale. Further, much of the information that is currently available is spread across several organizations.

3.4 Assessing the effects of the types of measures taken in accordance with the provisions of the Convention

64.   This target is a process-oriented target in that it requires Parties to undertake certain types of activities. As such, the portfolio of actions that need to be taken to attain this target are identified in the target itself. However, prioritizing these actions will be context-specific, and will depend on what types of economic, policy, or institutional failures drive the incentives that are contributing to environmentally harmful activities in a given country. Incentives which are harmful to biodiversity need to be identified and assessed, options for addressing them need to be considered and prioritized, and a course of action needs to be decided on and implemented. Similarly, for the development of positive incentives, opportunities to implement positive incentives need to be identified and prioritized and options to

implement them need to be established. While the types of actions that need to be taken are generally well known, there has been relatively little progress on this issue.

3.5 Conclusions from previous sections to enable identification and prioritization of scientific and technical needs related to the implementation of Target 3

Adequacy of guidance and tools in support of implementation at national level

65. Guidance and tools have been developed by various organizations. Further information would be helpful, in particular on non-economic incentives, in completing the existing tool sets and providing guidance.

Adequacy of data and information for monitoring progress at different scales

66. Information provided by countries, including through their national reports to the Convention, as well as information gathered by the different organizations working on this issue, provides a basis for assessing progress on this target. This could be complemented by assessments of trends in the reform of incentives generally, i.e. beyond biodiversity.

Effectiveness of actions taken

67. As this target is largely related to putting in place certain types of processes, the type of actions that are needed are well known, but identifying targeted reforms that are effective and compatible with countries' other policy objectives remains challenging. To date, there has been relatively little progress on this issue, and incentives harmful to biodiversity continue to be a major underlying cause of biodiversity decline. Similarly, the development of incentives which are beneficial to biodiversity is also challenging.

Summary conclusion

68. The reduction and eventual removal, phase-out or reform of long-standing policies constitutes a substantial political challenge and requires commitment to change. To facilitate this transition it is important that the elements be put in place to inform policymakers about the trade-offs involved and how to prioritize among biodiversity conservation actions in a way that is compatible with their other policy objectives. Developing a complete picture of both the economic and non-economic (policy and institutional) incentives leading to biodiversity loss will be key in achieving this target. The elements required to make progress towards this target are in place and elements for monitoring progress at the global level already exist, although further progress in further developing assessment tools and indicators is warranted.

Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

4.1 Elements of Target 4

69. The unsustainable use or overexploitation of resources is one of the main threats to biodiversity. Currently, many individuals, businesses and countries are making efforts to substantially reduce their use of fossil fuels, with a view to mitigating climate change. Similar efforts are needed to ensure that the use of other natural resources is within sustainable limits. This is an integral part of the Vision of the Strategic Plan for Biodiversity 2011-2020.

70.   Specifically, Target 4 requires that steps to achieve sustainable production and consumption have been taken by governments, business and stakeholders at all levels or that plans for this purpose have been implemented. The impacts of use of natural resources also need to be kept within safe ecological limits. Specific limits will vary with different ecosystems, depending on ecosystem composition and conditions and the type and magnitude of pressures being applied. In many cases, the actual limits will be unknown, so applying a precautionary approach will be needed, as well as undertaking research to better determine what the ecological limits may be.

4.2   Existing policy support tools and methodologies, their adequacy, impact, obstacles to their implementation

Policy support tools and methodologies to help achieve Aichi Biodiversity Target 4

71.   Under the Convention on Biological Diversity, the programme of work on the sustainable use of biodiversity serves as one framework for action for implementing this target. The Convention's work on business engagement and outreach to subnational governments (including cities) are also particularly relevant. Given the broad scope of this target, some of the other thematic programmes of work, dealing with specific sectors, have links to this target, as does the programme of work on economics, trade and incentive measures. More globally, the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity and the Guidelines on Biodiversity and Tourism Development (among others) are also applicable to Target 4. Several issues[22] of the CBD Technical Series also provide useful policy support. The Secretariat also maintains on its website a list of tools relevant to the sustainable use of biodiversity that have been developed by other organizations. Given the broad and upstream nature of this target, many tools developed outside the framework of the Convention may be relevant, for example, under the United Nations ten-year framework programme on sustainable consumption and production. Relevant tools have also been developed under other conventions. For example, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has developed tools related to species used in trade.

The application of existing policy support tools and methodologies

72.   Governments, the private sectors and consumers generally are paying increasing attention to issues related to sustainable consumption and production. However, from the information currently available, it is unclear to what extent the existing tools related to sustainable consumption and production have been used. Given the rather general nature of the existing tools, it is likely that they have been used to inform government or private sector action on sustainable development but that their actual use has been limited.

Obstacles to the use of existing policy support tools and methodologies

73.   There are several obstacles to the use of the existing tools addressing sustainable consumption and production. One of the major obstacles is that, given their general nature, it is difficult for them to be practically applied at either the national level or by different economic sectors. A further obstacle is that for meaningful action to be taken towards this target there must be dialogue among governments, economic sectors and stakeholders, including indigenous and local communities, in order to develop effective plans for sustainable consumption and production. Often, the producers, consumers, and other

---

[22] CBD Technical Series 60: Livelihood Alternatives for the Unsustainable Use of Bushmeat;
CBD Technical Series 56: Incentive Measures for the conservation and Sustainable Use of Biological Diversity: Case studies and lessons learned;
CBD Technical Series 39: Cross-Sectoral Toolkit for the Conservation And Sustainable Management of Forest Biodiversity;
CBD Technical Series 12: Solutions for sustainable mariculture - Avoiding the adverse effects of mariculture on biological diversity.

stakeholders can be overwhelmed by the plethora of standards and tools available. In addition, the increasing global population means that any dialogue on consumption must be balanced by legitimate developmental concerns.

Gaps in policy support tools and methodologies

74.   While there is a range of general policy tools and methodologies related to sustainable development, there are relatively few tools available to support Parties in translating these into national policies. Further, there is a lack of information and policy support tools and methodologies for effectively engaging with businesses. Additionally, the abundance of information represents a potential problem with regard to adoption and mainstreaming by companies.

75.   A major gap is the lack of application of the social sciences to support achievement of this target, as well as other targets of Goal A.[23] Because human actions are critical to sustainable and equitable biodiversity management, attempts to redress the rapid decline of biodiversity and ecosystem services must begin by understanding why people – individually and collectively – do what they do. This would require us to get better insights into how values and behaviour of individuals and collectives shape and are shaped by the formal rules and norms (formal and informal institutions) governing the way they act and interact within societies and the political ecology context of power and power relations within which this dynamic interplay of values, behaviours and institutions plays out in determining the access and use of resources.

4.3   The adequacy of observations, and of data systems, for monitoring the biodiversity attributes addressed in Aichi Biodiversity Target 4 and the use and development of indicators for the target

Ability to assess/measure the status of progress towards the target at global, regional, national and subnational levels

76.   The following operational indicators were identified in the annex to decision XI/3 A:

(a)   Trends in population and extinction risk of utilized species, including species in trade;

(b)   Trends in ecological footprint and/or related concepts;

(c)   Ecological limits assessed in terms of sustainable production and consumption;

(d)   Trends in biodiversity of cities;

(e)   Trends in extent to which biodiversity and ecosystem service values are incorporated into organizational accounting and reporting.

77.   Given the broad nature of this target, there are a range of indicators available, including one indicator ready for use at global level which is based on data from CITES.[24] The ecological footprint and/or related concepts are widely used at different scales and though the detailed metrics may differ they enable tracking the status of a particular area over time.[25] The concept includes indicators of resource use efficiency which are available for certain resources in some parts of the world. It also includes

---

[23] For further information see UNEP/CBD/SBSTTA/17/INF/1.

[24] http://www.bipindicators.net/speciestrade.

[25] http://www.bipindicators.net/ecologicalfootprint.

approaches, applied by growing number of urban areas, to assess trends in biodiversity in cities.[26] An indicator on wild commodities is being developed.[27] Further, some indicators which are relevant to other targets, particularly those related to agriculture, forestry and fisheries, as well as those related to sustainable land use, are also relevant. At national level many countries use indicators for priority areas, sectors or commodities, which can further contribute to the overall assessment of progress towards this target.

78.   The indicators currently available relate directly to the status and trends of biodiversity. As such, they should provide some indication as to the overall effectiveness of the actions that have been taken. However, in most instances it will be a challenge to link a specific action to a specific change in the indicator.

79.   In conclusion, a fair number of indicators, both global and sub-global, exist, with additional ones emerging. While none can cover all aspects of Target 4, they collectively enable assessments of global progress.

Areas where enhanced monitoring/better data/additional observations/additional indicators would make a significant difference in our ability to monitor progress in order to guide appropriate/targeted action

80.   There is a need to improve both the geographical and temporal coverage of some of the observation data sets for the indicators reported above. Currently, some indicators only have information on specific geographic areas or have data sets limited to one year. Improving geographical and temporal coverage would greatly enhance our ability to assess progress towards this target. There is also a need to identify the most used species and increase knowledge about their use and trade (focusing on the level of demand), as well as value chains.

Limitations in making these enhancements

81.   As with other targets, the main limiting factor is the limited availability of financial, institutional and human resources to carry out the enhancements. In particular, the limited availability of financial resources makes it difficult for organizations to continuously gather the data required to be able to develop and refine the indicators. Further, sustainable consumption and production and complex, multidimensional concepts, and therefore monitoring progress from a broad and holistic perspective, is inherently difficult.

4.4   Assessing the effects of the types of measures taken in accordance with the provisions of the Convention

82.   Generally the types of actions that are required to meet the target are known. These include such things as reducing the demand for resources or increasing resource use efficiency through government regulations and/or incentives, education, and social and corporate responsibility programmes, putting in place mechanisms to support sustainable consumption and production patterns in the public and the private sector, and developing procurement policies that are in line with the objectives of the Convention. Similarly, promoting scientific and technological innovation related to sustainable consumption and production could help in the achievement of this target.

83.   Measures to promote sustainable consumption and production will be instrumental in addressing one of the main causes of biodiversity loss. Many countries and organizations are putting in place measures for this purpose. These range from government procurement plans, certification schemes and

---

[26] See for example http://www.cbd.int/authorities/gettinginvolved/cbi.shtml.

[27] http://www.bipindicators.net/wildcommoditiesindex.

the development of guidelines to actions designed to increase consumer awareness. Despite the growing attention to this issue, the effectiveness of the actions taken has been limited. The reasons for this are varied. On the consumer side, sustainably produced products by and large continue to be more expensive than those which are not. This creates a major barrier to their widespread adoption in the market place and eventually makes this a "pre-competitive" issue for many commodities. Widespread uptake will be important in tackling this problem. On the producer side, many of the guidelines which have been developed are voluntary, and receiving sustainability certification from an outside body often entails costs which cannot necessarily be afforded by small and medium enterprises. In addition, tracking and enforcement of eco-friendly processes through all stages of the value/supply chain will remain a significant challenge. With regards to government action, while there are increasing efforts to develop green procurement policies, these remain limited as they are complicated to develop and require consultation with many stakeholders. Overall, while there are increasing efforts to encourage and support sustainable consumption and production, the effectiveness of these efforts has been limited on the global scale.

4.5 Conclusions from previous sections to enable identification and prioritization of scientific and technical needs related to the implementation of Target 4

Adequacy of guidance and tools in support of implementation at national level

84.   Guidance for taking action to implement this target is generally adequate. However, additional work may be required to develop tools and methods for effectively engaging with the production sector and for translating the general global guidance into methods or tools that are nationally applicable.

Adequacy of data and information for monitoring progress at different scales

85.   Several indicators and underlying observation systems exist at different scales. These provide a good basis for assessing progress towards the attainment of this target. Additional work to improve the geographic coverage of some indicators and to further develop the information, the data sets they draw upon and their continuity would further improve the foundation for such assessments.

Effectiveness of actions taken

86.   The general types of actions that are needed to attain this target are largely known; however, methods to translate these into specific actions at the national level are required. To date, the effectiveness of the actions taken has been limited.

Summary conclusion

87.   There do not appear to be any major gaps related to policy support tools, methodologies or guidance hindering progress towards this target at the global level. However, a major challenge lies in translating this general global guidance into policies which are tailored to national circumstances. We can assess progress towards some parts of this target, though there are several gaps. These could be addressed through improved geographic and temporal coverage of some of the observation data sets. While many countries and organizations are taking action to promote sustainable consumption and production, to date these have had a limited effect. This is the result of several issues, including the magnitude of the problem being addressed and the need to involve stakeholders from all segments of society.