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**ASSESSING THE EFFECTS OF THE TYPES OF MEASURES TAKEN IN ACCORDANCE
WITH THE PROVISIONS OF THE CONVENTION**

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, among other things, to prepare information on options for assessing the effects of the types of measures taken in accordance with the provisions of the Convention; and to report on progress in these matters to a meeting of the Subsidiary Body prior to the twelfth meeting of the Conference of the Parties.

2.   The present document contains observations and considerations regarding assessing the effects of the types of measures taken in accordance with the provisions of the Convention.

3.   An earlier draft of this note was subjected to peer-review from 11 July to 22 July 2013. Comments from 2 Parties (Canada, Mexico) were received and are reflected in this note.

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* UNEP/CBD/SBSTTA/17/1.

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II.   ASSESSING THE EFFECTS OF THE TYPES OF MEASURES TAKEN IN ACCORDANCE WITH THE PROVISIONS OF THE CONVENTION

A.   Background

4.   A review of the effectiveness of the processes under the Convention, including the effectiveness of the Subsidiary Body, was carried out in preparation for the first meeting of the Ad Hoc Open-ended Working Group on Review of Implementation of the Convention.[1] The review concluded that the Subsidiary Body fulfils its overall mandate of providing timely advice relating to the implementation of the Convention. However, it also noted that the experience in carrying out its specific functions included in Article 25 of the Convention varied.

5.   The sixteenth meeting of the Subsidiary Body further addressed the findings of the review under the agenda item "Ways and means to improve the effectiveness of the Subsidiary Body on Scientific, Technical and Technological Advice in light of the Strategic Plan for Biodiversity 2011-2020 and issues, modalities and options for collaboration with the intergovernmental science-policy platform on biodiversity and ecosystem services (IPBES)." The assessment prepared for the first meeting of the Ad Hoc Open-ended Working Group on Review of Implementation of the Convention had been updated for this meeting to capture developments since 2005 (UNEP/CBD/SBSTTA/16/2, annex II).[2] The updated assessment noted, among other findings, that the Subsidiary Body has yet to provide assessments of the effects of types of measures taken to implement the Convention (Article 25, paragraph 2(b)). It was found that the Subsidiary Body needs to dedicate significantly more time and efforts to provide advice on the effectiveness of the tools, measures and policies put in place. It was also noted that the Subsidiary Body has, with some exceptions, not played an active role in identifying the key research that needs to be undertaken in order to implement the Strategic Plan. In addition, the updated review found that the impacts of specific types of measures are difficult to determine in isolation from other reinforcing or mitigating factors. It concluded that the overall effects of measures and other drivers will be assessed through trends in the achievement of the Aichi Biodiversity Targets.

6.   The effectiveness of responses to biodiversity loss could also be addressed in the context of the request by the Conference of the Parties to the Executive Secretary, contained in decision XI/3, to explore, with the Secretariat of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), options for the preparation of a global assessment on biodiversity and ecosystem services, and to report on progress to a meeting of the Subsidiary Body. The Subsidiary Body may wish to address this aspect of the request from the Conference of the Parties under the agenda item on contribution of the Convention to the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) intersessional process (item 5).

7.   Section B of this document will discuss the assessment of effects of the types of measures taken in accordance with the provisions of the Convention as commonly understood in terms of progress towards achieving the objectives of the Convention. Section C contains broader considerations regarding the assessment of the effects of types of measures. In section D considerations for further steps by the Subsidiary Body are presented.

B.   Measures and their effects in achieving the objectives of the Convention

8.   "Types of measures" are not specified under the Convention. Which measures a Party chooses to adopt in order to achieve the objectives of the Convention depends on a multitude of different issues, ranging from broad policy considerations to the institutional framework, financial capacities and other national circumstances of the Party. A measure could include any formal action taken in accordance with

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[1] See UNEP/CBD/WGRI/1/3 at www.cbd.int/doc/meetings/wgri/wgri-01/official/wgri-01-03-en.doc.

[2] Available at www.cbd.int/doc/meetings/sbstta/sbstta-16/official/sbstta-16-02-en.pdf.

the Convention, such as national strategies, plans or programmes for the conservation and sustainable use of biological diversity (including NBSAPs), sectoral or cross-sectoral plans, programmes and policies which incorporate the conservation and sustainable use of biological diversity, as set out in Article 6 of the Convention, or more specific measures such as a system of protected areas (Article 8(a) of the Convention), payments for ecosystem services schemes or policies for the decentralization of natural resource management.[3] Generally, measures taken in accordance with the Convention may also include guidance, programmes of work and other tools contained in decisions of the Conference of the Parties. Parties have adopted a myriad of different measures to implement the Convention on Biological Diversity; hence it will not be possible for the Subsidiary Body to discuss the effects of these specific measures. Rather, the Subsidiary Body is asked by the Conference of the Parties to address the effects of measures by "types".

9.   Article 26 of the Convention calls upon Parties to report on measures taken to implement the Convention and their effectiveness in achieving the objectives of the Convention. Accordingly, the guidelines to the fourth national report called for information on the effectiveness of NBSAPs and the effectiveness of their implementation by asking specifically:

        (a)   Whether observed changes in status and trends in biodiversity are a result of measures taken to implement NBSAPs and the Convention;

        (b)   Whether the current NBSAP is adequate to address identified threats to biodiversity; and

        (c)   How implementation of NBSAPs may be improved, where necessary, including suggestions of possible ways and means to overcome identified obstacles.

10.   While Parties have provided comprehensive information on the actions they are undertaking through their national reports, only some 20 per cent included an analysis of the effectiveness of actions. In most cases, the analysis in the fourth national reports focused on NBSAP implementation. Little information was provided about mainstreaming and implementation of the 2010 targets. Analytical efforts were limited by factors such as lack of systematic monitoring of implementation particularly impacts resulting from actions, and lack of on-the-ground evidence or cases and the lag factor of when possible outcomes of measures might become evident. These limitations were particularly prominent when it came to analysing the effectiveness of mainstreaming and specific measures aimed at achieving the 2010 targets.

11.   Furthermore, even if Parties referred in their fourth national reports to stakeholder processes and institutional arrangements through which they determine priorities and select and implement measures, little, if any, documentation is provided on how these processes and arrangements are conducted and established. Such stakeholder processes and institutional arrangements, however, are likely to have a bearing on the effects of measures.

12.   While indicators provide insights on the ultimate effects of measures, the process of implementing measures and the factors and context that determine the success of measures, mostly take place within a "black box" about which not much is known. The "black box" contains, among others, the processes by which Parties select measures, the institutional arrangements which provide the context for their implementation, the implications of the specific biophysical circumstances of a Party on the effects of measures, or the sequence of measures required for them to be effective.

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[3] Chapter 3 of the Millennium Ecosystem Assessment distinguishes different categories of measures such as "legal" and "economic measures", these are, however, to unspecific for present purposes.

1.   The role of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Targets

13.   In academic literature, effects of measures are not only discussed in terms of achieving certain environmental goals. Legal literature, for example suggests evaluating whether a measure is successfully implemented and complied with. Environmental science literature would focus the evaluation of effects on the ability of a measure to solve, or significantly contribute, to solving its underlying problem and achieve broader societal goals. Political scientists suggest evaluating whether the measures lead to an enhanced understanding of the underlying problem, behavioural change and co-operation.

14.   The Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets is a flexible framework that is intended to support Parties, through global concrete goals and targets, to achieve the objectives of the Convention. Therefore, effects of measures adopted to meet the objectives of the Convention can be evaluated in terms of progress towards the achievement of the Strategic Plan and the Aichi Targets.

15.   Moreover, the Strategic Goals of the Strategic Plan for Biodiversity 2011-2020 address the direct pressures on biodiversity loss and aim to directly safeguard ecosystems, species and genetic diversity, but also address the underlying causes of biodiversity loss, intend to enhance the benefits to all from biodiversity and ecosystem services and aim to enhance implementation through participatory planning, knowledge management and capacity-building. A discussion of the effects of types of measures in terms of their contribution towards achieving the Strategic Plan for Biodiversity 2011-2020 therefore takes into account all of the main concepts described in academic literature.

16.   The Subsidiary Body will consider the effects of the types of measures taken in accordance with the Convention indirectly when contributing to the review of progress towards the Aichi Biodiversity Targets in accordance with decision X/2, in particular through the development of the fourth edition of the Global Biodiversity Outlook and also through its ongoing work to develop a common set of biodiversity metrics to be used to assess the status of biodiversity and its values. An indicative list of indicators is being used as a starting point for assessing progress.[4]

2.   Examples for successful types of measures

17.   The work undertaken so far to assess progress towards achieving the Aichi Biodiversity Targets has revealed some examples with regard to effects of specific types of measures:

18.   A case example from India shows how economic incentive measures contribute to achieving Aichi Biodiversity Targets 3 and 5. In India, large areas of farmland have become barren due to excessive use of a single fertilizer, urea. The existing subsidy regime favoured urea and consequently led to urea overuse by farmers to the detriment of other essential nutrients. In February 2009, the Indian Cabinet decided to relax controls on the prices of fertilizers, with the exception of urea, whose price was increased by 10 per cent. By partially liberalizing the prices of potassic and phosphate fertilizers, while still maintaining control through a more flexible subsidy regime, the Government intended to keep the relative prices of these nutrients low compared to urea, and to set incentives for farmers to use a more appropriate amount and balanced types of fertilizers. Thus, this policy contributes to maintaining soil biodiversity (bacteria, earthworm, micro-arthropods), ultimately protecting agricultural biodiversity.[5]

19.   With regard to measures adopted under Aichi Target 12, evidence suggests that the effectiveness of conservation actions will be limited, without accompanying mainstreaming efforts. A study using data for over 25,000 assessed species on the International Union for Conservation of Nature Red List of Threatened Species concluded that in the absence of conservation efforts the conservation status of

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[4] See decision XI/3.

[5] CBD Technical Series No. 56, Incentive measures for the conservation and sustainable use of biological diversity - Case studies and lessons learned, p. 26.

species would have been worse than the observed status.[6] The authors conclude that targeted, strategic conservation action can reduce the rate of loss relative to that anticipated without such efforts. However, they also note that the current level of action is outweighed by the magnitude of threats facing species, and conservation responses will need to be substantially scaled up to combat the extinction crisis. For conservation action to be most effective, they call for coordinated efforts to safeguard and effectively manage critical sites, complemented by broad-scale action to minimize further destruction, degradation, and fragmentation of habitats and to promote sustainable use of productive lands and waters in a way that is supportive to biodiversity.

20.   The Millennium Ecosystem Assessment also already attempted to provide general guidance as to which measures are most effective to address different environmental issues.[7] Such an overall assessment, however, could only provide estimates applicable to an average context. Thus, it may be difficult for individual countries to apply the findings of the Millennium Ecosystem Assessment to their particular circumstances.

21.   The global assessment on biodiversity and ecosystem services as requested from IPBES may provide further insights on the effectiveness of responses to biodiversity loss. However, Parties may already wish to establish tailored evaluation processes for the measures they are undertaking. The outcomes can serve as a basis for adaptive management –adjusting and fine-tuning policy instruments over time with a view to optimizing biodiversity outcomes.

22.   Strategic environmental assessments have also proven successful as a method to identify and evaluate the effects of proposed policies, plans or programmes before their adoption. Strategic environmental assessments intend to ensure that biodiversity impacts are fully included and appropriately addressed at the earliest possible stage of decision-making on a par with economic and social considerations. The Conference of the Parties, at its eighth session, endorsed draft guidance on biodiversity-inclusive strategic environmental assessment (contained in annex II to the note by the Executive Secretary on voluntary guidelines on biodiversity-inclusive impact assessment, document UNEP/CBD/COP/8/27/Add.2). In addition, voluntary guidelines for the consideration of biodiversity in strategic environmental assessments in marine and coastal area are available in the annex to document UNEP/CBD/COP/11/23 (see decision XI/18 B).

C.   Additional considerations

23.   At its core, assessing the effects of types of measures taken in accordance with the provisions of the Convention refers to measuring progress in achieving the Aichi Biodiversity Targets, and progress towards achieving the objectives of the Convention more broadly. However, a number of additional issues may be relevant in this context, including the causal link between measure and effect, the need to evaluate the effects of different measures in combination, the cost-efficiency of measures and external factors influencing the assessment of effects.

1.   Causality

24.   In order to fully understand the effects of measures taken in accordance with the provisions of the Convention, the progress measured by indicators needs to be causally linked to individual measures. Assessing this link will indicate whether the success of a measure is actually caused by the measure, or a result of other factors. To attribute progress in the achievement of the Aichi Biodiversity Targets to specific measures, it is a precondition to establish which measures were intended to contribute to which target.

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[6] Hoffmann, M. et al. 2010, The Impact of Conservation on the Status of the World's Vertebrates, Science Vol. 330, p. 1503-1509.

[7] Millennium Ecosystem Assessment 2005, Volume 3: Policy Responses, p. 65-66.

25.   In academic literature and policy evaluation practice, a number of approaches have been developed to determine the existence of a causal link between measures and effects. A common method includes the establishment of counterfactuals, i.e. a comparison of situations either with and without exposure to a measure, or before and after the application of a measure. Counterfactuals also serve to identify the effect of covariates, i.e. observable socioeconomic, biophysical, economic, or institutional factors that influence the outcome of a measure. Econometric approaches, for example to achieve a random distribution of alternative causes for effects, are available to support the successful evaluation of counterfactuals.[8] A different method, the evidence-based approach, focusses its evaluation on evidence with regard to which measures have been effective, and under which circumstances, in practice.

2.   A mix of measures

26.   For many types of measures, evaluating their effects individually does not take into account the interdependence of different measures. For example, most measures are established in a sequence: Economic incentives generally need a legal framework to become effective, and regulatory measures may employ monetary penalties, i.e. economic incentives, to enhance compliance.[9] Examples demonstrate that a standalone conservation policy tends to be less effective than a coherent mix of mutually supporting policy measures.[10] The strategy adopted by the Brazilian Government since 2005 to combat and reduce deforestation, illegal logging and fires in the forests and savannas of the Brazilian Amazon and since 2009 in the Cerrado biome, which led to a reduction by 80 per cent of the deforestation rate in the Amazon, is based on a combination of over 20 policy instruments combined with measures to enhance monitoring and public participation.[11]

3.   External factors

27.   An evaluation of the effects of types of measures with regard to their contribution to achieving the Strategic Plan for Biodiversity 2011-2020 and its Aichi Targets may also provide an opportunity for a more coherent evaluation of measures receiving financial support from donors. Donors supporting the implementation of measures taken in accordance with the provisions of the Convention may wish to seize this opportunity and define their evaluation criteria in accordance with the Strategic Plan and its Aichi Targets and align them with related national implementation priorities. [12]

4.   Implementation processes

28.   In addition, the effect of types of measures also depends on the processes by which they are implemented. For example, stakeholder processes and institutional arrangements through which Parties determine priorities and select and implement measures are likely to have a bearing on the effects of these measures. A thorough documentation of the context and ways in which a measure is implemented may provide crucial insights into the reason for its effectiveness or failure.

5.   Availability of data

29.   All evaluation methods which intend to establish a clear causal relationship between a measure and observed effects require the availability of a large amount of specific data. The availability of data is

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[8] Miteva, D. A., S. K. Pattanayak, and P. J. Ferraro 2012, Evaluation of Biodiversity Policy Instruments: What Works and What Doesn't?, Oxford Review of Economic Policy Vol. 28 (2), p. 71.

[9] Millennium Ecosystem Assessment, Volume 3: Policy Responses, p. 40.

[10] Hirakuri, S.R. 2003, Can Law Save the Forest? Lessons from Finland and Brazil, Center for International Forestry Research, Jakarta, Indonesia, p. 95.

[11] Federal Republic of Brazil, Ministry of Environment (MMA) 2012. Strategies to Reduce Deforestation in Brazil. From controlling illegal deforestation to the challenge of sustainable production in the country's forests and savannas. Report prepared for the Rio+20 Conference on Sustainable Development.

[12] Ferraro, P. J. and S.K. Pattanayak 2006, p. 486.

restricted by both (i) poor infrastructure, training and a lack of a history of systematic data collection in many countries, and (ii) the challenge of combining ecological, socio-economic, and institutional data, which may in addition require a standardized methodology. Experts from different disciplines, such as economists and natural scientists, need to enhance interdisciplinary collaboration and partnerships on data collection to address this challenge.[13] In addition, species-based monitoring programmes, for example, would benefit from using new monitoring methods and technologies such as camera trapping devices and visual and auditory identification devices and software.

30.   A review paper on environmental monitoring contends that monitoring should be considered a fundamental component of environmental science and policy and urges scientists who develop monitoring programmes to plan in advance to ensure high data quality, accessibility, and cost-effectiveness. The authors further urge government agencies and other funding institutions to make greater commitments to increasing the amount and long-term stability of funding for environmental monitoring programmes.[14] In particular, donors could be encouraged to provide funding for programmes monitoring the status of non-mediatized species which are essential engineer or predator species (pollinators, snakes, etc.).

6.   Methods for assessing cost-efficiency

31.   Besides evaluating the effects of measures in terms of the objectives of the Convention, the cost-efficiency of a measure may also usefully be assessed. Aichi Target 20 explicitly aims for the mobilization of financial resources for its effective implementation. The achievement of this target may thus require the adoption of cost-efficient measures.

32.   The cost-efficiency of measures is determined by comparing the cost-benefit ratios of different measures addressing the same problem. This implies firstly to determine the cost-effects of measures by means of a cost-benefit analysis. While information on the cost of implementing a measure may be readily available, the benefits of a measure may be more difficult to determine. The evaluation of the cost-effectiveness of a measure should not only consider transaction costs, for example the expenses associated with establishing and operating the necessary monitoring schemes or enforcing the implementation of the chosen measure, but should take into account the overall social cost and benefits associated with the measure. Thus, the wider discussions on the valuation of biodiversity and the ecosystem services it underpins apply here.[15]

D.   The role of the Subsidiary Body

33.   The Subsidiary Body may play three distinct roles in assessing the effects of the types of measures at the level of the Convention, by: (i) supporting Parties in determining the effects of types of measures they have taken in accordance with the Convention; (ii) assessing the effects of types of measures based on the experiences of Parties; and (iii) evaluating cumulatively whether enough effective measures are taken and whether a combination of measures is taken that will allow for the cost-efficient achievement of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets.

1.   Supporting Parties in determining the effects of types of measures

34.   The Subsidiary Body may wish to encourage Parties to engage in documenting, assessing, and analysing the processes by which priorities and measures are established, selected and implemented, for example stakeholder consultation processes, mainstreaming efforts, the establishment and functioning of inter-ministerial coordination structures, etc. The documentation of evidence on the functioning and lessons learned from these processes may reveal comprehensive insights on the context required for measures to be effective.

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[13] Miteva, D. A., S. K. Pattanayak, and P. J. Ferraro 2012, p. 85.

[14] Lovett, G.M. et al. 2007. Who needs environmental monitoring? Frontiers in Ecology and the Environment 5 (5).

[15] See for example: Millennium Ecosystem Assessment, Volume 3: Policy Responses, p. 81-83.

35.   In addition, the Subsidiary Body may wish to encourage Parties to link actions and measures they are taking to specific Aichi Biodiversity Targets and specific objectives, thereby providing the basis for assessments of the effects of measures with regard to the achievement of the Aichi Biodiversity Targets.

36.   The Subsidiary Body may also wish to engage in further discussions on available methods, tools and guidance for the assessment of the effects of types of measures taken in accordance with the Convention.

2.   *Assessing the effects of types of measures based on the experiences of Parties*

37.   The Conference of the Parties, in decision X/2, decided to keep implementation of the Strategic Plan for Biodiversity 2011-2020 under review, with the support of other Convention bodies. The Conference of the Parties also decided to support effective implementation by ensuring that new guidance is informed by the experience of Parties in implementing the Convention in line with the principle of adaptive management through active learning. The Subsidiary Body may therefore provide a forum for Parties to continue to present their experiences with respect to the measures taken in accordance with the provisions of the Convention. This would foster technical and scientific cooperation in accordance with Article 18 of the Convention.

38.   In addition, the Subsidiary Body may develop further guidance with regard to the aspect of evaluating the effectiveness of responses to biodiversity loss within a global assessment on biodiversity and ecosystem services, as requested from IPBES.

3.   *Evaluating the cumulative effects of national targets*

39.   In the context of assessing the effects of measures taken in accordance with the provisions of the Convention, the broader discussion on the effectiveness of the Convention itself should also be mentioned briefly. It has been argued frequently in the literature that multilateral environmental agreements are effective if Parties fulfil their obligations under the respective agreement. However, for the case of the Convention this may not be a sufficient criterion. Even if the Convention has led, in many countries, to the design or actualization of national strategies and action plans, which include concrete activities and timeframes, the Convention itself does in many cases not include clear and specific requirements, but rather serves as a framework.[16] Considering the ample flexibility afforded to Parties for their implementation of the Convention, the mere existence of measures at the national level may not serve as a sufficient indication of the effectiveness of the Convention.[17] Rather, it is crucial that the Convention is implemented at the national level through effective measures that lead to positive outcomes towards achieving the objectives of the Convention, such as the translation of the Aichi Biodiversity Targets into ambitious national targets, and the determination of national indicators to demonstrate progress. Implementation through such effective measures may as a consequence constitute the overall effectiveness of the Convention.

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[16] Le Preste, P. 2002, Studying the Effectiveness of the CBD", in: P. Le Preste, Governing Global Biodiversity. The Evolution and Implementation of the Convention on Biological Diversity", Ashgate, p. 69.

[17] Le Preste, P., Studying the Effectiveness of the CBD, p. 65.