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**FURTHER ADVICE ON POSSIBLE INDICATORS AND POTENTIAL MECHANISMS TO
ASSESS CONTRIBUTIONS AND IMPACTS OF REDD+ TO BIODIVERSITY**

Note by the Executive Secretary

I.   INTRODUCTION

1.   The Conference of the Parties requested the Executive Secretary to further develop advice on possible indicators to assess the contribution of reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries (REDD+)[1] to achieve the objectives of the Convention and to assess potential mechanisms to monitor impacts on biodiversity from these activities and other ecosystem-based approaches for climate change mitigation measures (decision XI/19, para. 18).

2.   The Executive Secretary was also requested to compile information on experiences, lessons learned and best practices on the contribution REDD+ activities towards achieving the objectives of the Convention and the Strategic Plan for Biodiversity 2011–2020 (decision XII/20, para. 7(e)). To this end, the Executive Secretary invited Parties and relevant organizations, through notification 2015-018, to provide information pursuant to these provisions. As of June 2015, the Secretariat received submissions from nine Parties and five organizations.[2]

3.   The current note provides an update of developments on REDD+ discussions in section II, and reviews options in section III for the use of indicators and potential monitoring mechanisms to assess the impacts of REDD+ activities on biodiversity. Section IV summarizes experiences, lessons learned and best practices on the contribution REDD+ activities towards achieving the objectives of the Convention and the Strategic Plan for Biodiversity 2011–2020, with conclusions presented in section V. Further details are contained in an information document (UNEP/CBD/SBSTTA/20/INF/30). Draft recommendations are contained in UNEP/CBD/SBSTTA/20/10.

II.   BACKGROUND

4.   By decision 1/CP.16, paragraph 70, the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) encouraged Parties to undertake mitigation actions in the forest sector through the following activities, commonly known as REDD+: (a) reducing

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[*] UNEP/CBD/SBSTTA/20/1/Rev.1.

[1] REDD+ is used as a shorthand for "reducing emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks in developing countries", consistent with paragraph 70 of decision 1/CP.16 of the United Nations Framework Convention on Climate Change (UNFCCC). The acronym REDD+ is used for convenience only, without any attempt to pre-empt ongoing or future negotiations under UNFCCC.

[2] See section IV for details.

emissions from deforestation; (b) reducing emissions from forest degradation; (c) conservation of forest carbon stocks; (d) sustainable management of forests; and (e) enhancement of forest carbon stocks. In recognition of the social and environmental risks and benefits that REDD+ may entail, Parties agreed on a set of seven social and environmental safeguards, referred to as the "Cancun safeguards" that should be "promoted and supported" while implementing REDD+ activities.[3]

5.   Paragraph 71 of the same decision requests developing countries aiming to undertake REDD+ activities to develop, inter alia, a national strategy or action plan, a national forest reference emission level and/or forest reference level, a robust and transparent national forest monitoring system for the monitoring and reporting of REDD+ activities, and a system for providing information on how the Cancun safeguards are being addressed and respected throughout the implementation of these activities (also referred to as Safeguards information system or "SIS").

6.   The Warsaw Framework[4] also requires that countries submit a summary of information on how all of the Cancun safeguards are being addressed and respected throughout REDD+ implementation. This is required before results-based payments can be made. Summaries should be submitted with national communications directly to the UNFCCC REDD+ web platform on a voluntary basis, before starting the implementation of REDD+ actions.

7.   At the twenty-first session of the Conference of the Parties to UNFCCC, in Paris, REDD+ was officially recognized as one of the ways in which Parties might contribute to limit the concentration of greenhouse gases in the atmosphere and to reach the objective of keeping global warming under 2 degrees Celsius and pursuing efforts to limit it to 1.5 degrees Celsius.[5] Two more decisions pertaining to REDD+ were adopted. The first decision states that when "providing information on how the safeguards are being addressed and respected", Parties are "strongly encouraged" to provide "information on which activity or activities the information on safeguards applies to", and that, within their summaries, Parties should provide information on how "each" of the safeguards has been addressed and respected, in accordance with national circumstances.[6] This clarifies that the potential risks and benefits covered by Cancun safeguards e), c) and d), which are of particular relevance to the objectives of the Convention on Biological Diversity, should ideally be specifically addressed in Parties' Summaries of information.

8.   Under the second decision, Parties to UNFCCC reaffirmed the importance of non-carbon benefits that may result from the implementation of REDD+ and recognize that "developing country Parties seeking support for the integration of non-carbon benefits into [REDD+], with a view to contributing to the long-term sustainability of those activities, may provide information addressing, inter alia, the nature, scale and importance of the non-carbon benefits."[7]

9.   Actions to conserve and enhance forests as sinks of greenhouse gases are noted in the Paris Agreement. In Article 5 of the Agreement, Parties are encouraged to "implement and support the existing framework as set out in related guidance and decisions already agreed under UNFCCC for activities related to REDD-plus; and alternative policy approaches, such as joint mitigation and adaptation approaches for the integral and sustainable management of forests", also reaffirming "the importance of incentivizing, as appropriate, non-carbon benefits associated with such approaches."

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[3] Decision 1/CP.16, Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention, UN Doc. FCCC/CP/2010/7/Add.1, 15 March 2011, at paragraph 70.

[4] Building on earlier decisions, the Warsaw Framework for REDD-plus consists of decisions 9/CP.19, 10/CP.19, 11/CP.19, 12/CP.19, 13/CP.19, 14/CP.19 and 15/CP.19.

[5] United Nations Framework Convention on Climate Change, Conference of the Parties, twenty-first session, decision 1/CP.21 (see FCCC/CP/2015/10/Add.1).

[6] Decision 17/CP.21 Further guidance on ensuring transparency, consistency, comprehensiveness and effectiveness when informing on how all the safeguards […] are being addressed and respected" - FCCC/CP/2015/10/Add.3

[7] Decision 18/CP.21 Methodological issues related to non-carbon benefits r resulting from the implementation of [REDD-plus] - FCCC/CP/2015/10/Add.3.

III. POSSIBLE INDICATORS AND MECHANISMS TO ASSESS THE CONTRIBUTION OF REDD-PLUS ACTIVITIES TO THE OBJECTIVES OF THE CONVENTION ON BIOLOGICAL DIVERSITY

Existing indicator frameworks

10.   In view of a feasible and cost-effective assessment of the contribution of REDD+ to the objectives of the Convention on Biological Diversity, Parties may wish to make use of existing indicator frameworks and processes, including those developed under the Convention on Biological Diversity and by Parties in their preparation for REDD+. Different examples are presented below.

Information from REDD+ processes

11.   Several elements of the Warsaw Framework for REDD+ may provide relevant information for an assessment of the contribution of REDD+ to the objectives of the Convention on Biological Diversity. National strategies or action plans may contain information on the nature and location of REDD+ actions which, combined with trends in biodiversity indicators, could help to detect positive or negative impacts of REDD+ on national biodiversity objectives.[8]

12.   Data from national forest monitoring systems,[9] especially if spatially explicit and if it distinguishes from different forest types, may also be combined with spatially explicit biodiversity data to determine if reductions in forest cover loss and degradation and, an increase in forest restoration, are occurring in areas of importance for biodiversity at national or global scale. Further, data from Safeguards information systems and contained in Parties' Summaries of information on how safeguards are addressed and respected, especially in relation to Safeguards c), d) and e), may be relevant to such an assessment. UNFCCC guidance suggests that monitoring systems and safeguard information systems "build upon existing systems, as appropriate".[10] This may include systems to monitor progress on national biodiversity strategies and action plans (NBSAPs), or information from other forest-related processes.

Voluntary guidelines on national forest monitoring[11]

13.   To address forest monitoring needs, the Food and Agriculture Organization of the United Nations (FAO) has been supporting countries in the design and implementation of national forest inventories and information systems for many years. During the twenty-first session of the Committee on Forestry member countries recommended that FAO continue to support countries' efforts to strengthen national forest information systems. The Committee on Forestry requested FAO to "work in close collaboration with member countries and relevant organizations to prepare a set of voluntary guidelines on national forest monitoring, which takes into account the requirements for REDD+ reporting and is in line with the principles and goals of the Forest Instrument".[12] The aim of the voluntary guidelines is to compile good practice principles, guidelines and selected methodologies and tools, and to present a general framework and set of decision support tools for planning and implementing a multi-purpose national forest monitoring system.

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[8] Where trends in biodiversity indicators and presence of REDD+ actions overlap, further assessments will be needed to determine whether these trends are attributable to REDD+.

[9] In accordance with UNFCCC decision 11/CP.19, national forest monitoring systems, as referred to in Decision 1/CP.16 paragraph 71, should provide data and information that are transparent, consistent over time, suitable for measuring, reporting and verifying anthropogenic forest-related emissions by sources and removals by sinks, forest carbon stocks, and forest carbon stock and forest-area changes resulting from the implementation of REDD-plus activities, and build upon existing systems, while being flexible and allowing for improvement.

[10] UNFCCC Decision 11/CP.19; UNFCCC Decision 12/CP.17 FCCC/CP/2011/9/Add.2.

[11] National forest monitoring is defined as a comprehensive process that includes the collection, analysis and dissemination of forest-related data and the derivation of information and knowledge at regular intervals to allow monitoring of changes over time, and which focuses on national level data and information on forests and trees outside forests, their condition, values and uses. The relevant, timely and reliable information obtained supports forest-related decision making at national and sub-national levels.

[12] FAO. 2012. Report of the Committee of Forestry. 21st Session: COFO 2012/REP paragraph 50, page 7. Rome, Italy. Available at: http://www.fao.org/docrep/meeting/026/me988e.pdf.

14.   The voluntary guidelines are divided into three main sections, of which sections I and II contain a background and fourteen principles.[13] Several of these principles relate to biodiversity and will require further consultation on possible observation and estimation techniques to ensure that features of relevance to the objectives of the Convention on Biological Diversity and to the Cancun Safeguards, such as "forest biodiversity" and "naturalness of forests" are treated as core data needs shared by several interested stakeholders.

15.   As national inventories are unlikely to be conducted at a periodicity that allows for a quick detection of the potential impacts of REDD+ on biodiversity, they may aim to consider the combined use of remote sensing data sources that provide faster and more cost-effective wall-to-wall information on changes in forest cover.[14] In addition, given the multi-purpose focus of these monitoring systems, it will be important to understand how information and knowledge generated by these systems will feed into and support the monitoring and assessment of national and international forest-related targets, like the Aichi Biodiversity Targets. This will require intersectoral communication and coordination, and may support the feasibility and cost-efficiency of national forest monitoring efforts. The latter is particularly important should the development of the monitoring system design succeed in integrating objectives from various forest policy agendas (climate, biodiversity, forestry), and in raising corresponding co-funding.

16.   Section III of the voluntary guidelines, which contains detailed guidance and technical recommendations for specific topics, is currently being finalized by FAO in collaboration with international experts. The potential for using the guidelines to assess the impacts and contributions of REDD+ activities to forest biodiversity considerations will require further examination.

Global Forest Resources Assessment

17.   The Global Forest Resources Assessments of FAO are produced usually every five years in an attempt to provide a consistent approach to describing the world's forests and how they are changing. The assessments are based primarily on Country Reports prepared by National Correspondents. These data are often complemented by global remote sensing information and may be derived by countries themselves through remote sensing.

18.   Countries report information relevant to a number of variables called for in UNFCCC decision 11/CP.19 including forest-area changes and forest carbon stock. Countries also provide information on forest area within protected areas and forest area designated for the conservation of biodiversity. The voluntary guidelines mentioned above build on the experience and lessons learned of the Global Forest Resources Assessments.

19.   However, the information reported to FAO is nationally aggregated and does not differentiate forest areas targeted by REDD+ actions from any other forest areas. In addition, the information related to biodiversity in the Forest Resources Assessments does not enable an assessment of how the biodiversity-related Cancun safeguards are being addressed and respected throughout the implementation of REDD+ activities.

Regional criteria and indicator processes for sustainable forest management

20.   Criteria and indicators can be useful tools to define, assess and monitor periodic progress towards sustainable forest management in a given country or in a specified forest area over a period of time. They

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[13] The 14 principles are: country ownership and responsibility; legal basis; national forest monitoring needs - a landscape view; national forest monitoring should be institutionalized; research infrastructure and capacity building should be taken in consideration; it needs to be a participatory discussion process among national stakeholders on the scope and objectives of forest monitoring; national forest monitoring must satisfy national level information needs; there should be integration of and consistency with existing information sources; a flexible approach in order to integrate emerging issues and allow for periodic revisions; national forest monitoring should follow a multi-purpose approach; the feasibility including cost-efficiency should be taken in consideration; it should include a well-defined data and information sharing policy; has credibility through transparency and quality; and promote collaboration at international level.

[14] Furthermore, while forest inventories might be sufficient for reporting on change in forest area and carbon stocks, the experience of Brazil shows that a remote-sensing based, high frequency monitoring of forest cover change can be a complementary tool for the implementation of REDD+ actions related to the enforcement of forest legislation.

measure and help monitor the status and changes of forests in quantitative, qualitative and descriptive terms that reflect forest values as seen by those who define each criterion.[15]

21.   Regional processes and guidelines[16] for sustainable forest management, such as the International Tropical Timber Organization (ITTO) Process, Montreal Process, and Forest Europe, have established regional and/or coordinated national reporting mechanisms on the status and progress towards sustainable forest management, based on criteria and indicators. Since most national and forest management unit criteria and indicator sets include a number of quantifiable indicators relevant to forest carbon accounting (e.g. forest area and type, growing stock, age structure, annual removals, annual harvest, and forest carbon pools, storage and fluxes), these could provide a useful reference for assessing the forest elements of the Aichi Biodiversity Targets in the context of REDD+, especially in relation to activities for the sustainable management of forests.

22.   Submissions from Parties referred, in particular, to indicators developed under the Montreal Process, which may be relevant for assessing the contribution of REDD+ activities to the objectives of the Convention on Biological Diversity. The advantages of coordinated regional efforts on criteria and indicators for forest monitoring were also underlined.

23.   Challenges remain, however, in fully ensuring the sustainable management of forests, at the forest management unit and country levels, and in measuring impacts over time, rather than the process in itself, in order to ensure a comprehensive assessment of the contribution of this possible form of REDD+ implementation to biodiversity conservation. Further details of existing indicator frameworks that could also help in assessing the contribution of REDD+ to the objectives of the Convention are presented in an information note (UNEP/CBD/SBSTTA/20/INF/30).

Forest certification schemes

24.   Forest certification is another instrument which can help countries and private companies to assess the maintenance and conservation of biological diversity within the scope of REDD+ activities for the sustainable management of forests. As these schemes are exclusively concerned with the forest management unit level, they play an important role in setting operational standards for assessing forest management against performance standards. Certification could act as an incentive to render forests into a state closer to their potential natural vegetation, for example by setting conditions for increasing the tree diversity and promoting mixed stands, improving the protection of threatened species and reducing chemical use in forest management.

25.   Certification schemes have expanded over the years in response to market demand for sustainably and legally harvested products. While trends show an expected rise toward certification in the future, its relevance to measure impacts and contributions of REDD+ to biodiversity as a whole may be low, since most tropical forest management units and forests may remain uncertified due to the high costs associated with certification. The need for strong operational and management standards as well as governance structures and systems to ensure that such standards are applied can be additional cost limitations.

Indicators for the Strategic Plan for Biodiversity 2011-2020

26.   Data collected for indicators proposed in UNEP/CBD/SBSTTA/20/13 may be relevant in so far as they can be disaggregated to produce national-level data. The updated list of indicators for the Strategic Plan for Biodiversity includes consideration of whether these indicators lend themselves to downscaling, which could help countries determine their potential relevance for use at the national scale for both REDD+ and biodiversity objectives.

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[15] FAO.2008. http://www.faco.org/forestry/ci@45047/en/

[16] A number of guidelines are available to assist Parties in applying sustainable forest management, such as the ITTO Guidelines for the Sustainable Management of Tropical Forests, and others developed by the ITTO Process, the Montreal Process and Forest Europe, which are three of nine regional criteria and indicator forest processes.

27.   A description of how some of the indicators for the Strategic Plan for Biodiversity, once disaggregated at the national level, may (a) help determine the positive contributions or negative impacts of REDD+ to biodiversity, (b) contribute to REDD+ safeguard information needs, and on the converse (c) how information from a countries' REDD+ process could potentially contribute data for a particular Aichi Biodiversity Target indicator, has been prepared by the Executive Secretary and can be found in an information note (UNEP/CBD/SBSTTA/20/INF/30). This description is non-exhaustive and is meant to illustrate the potential connections between data collected through the REDD+ processes and a countries' national biodiversity strategy and action plan (NBSAP).

28.   More generally, the United Nations Environment Programme's World Conservation Monitoring Centre (UNEP-WCMC) and a wide range of partners, through the Biodiversity Indicators Partnership and the NBSAP Forum, provide support to a number of countries in developing nationally appropriate indicators to assess progress towards the Aichi Biodiversity Targets.[17]

Other indicators and monitoring processes

29.   Global Forest Watch (GFW) is an interactive online forest monitoring and alert system which uses a range of remote-sensing and other sources of spatial data to provide information about the status of forest landscapes worldwide, including near-real-time alerts showing suspected locations of recent tree cover loss. Global Forest Watch is free and accessible through a simple web interface where a number of forest-related spatial data sets can be consulted. Users can also create custom maps, analyse forest trends, subscribe to alerts, or download data for a given area or the entire world.

30.   A number of biodiversity-related layers can be overlaid on the forest loss and gain data, such as the location of protected areas, biodiversity hotspots, endemic bird areas, alliance for zero extinction sites and tiger conservation landscapes. In combination with information on the nature and location of REDD+ actions, this tool could help conduct rapid assessments of the contribution of REDD+ to slowing the loss of habitat in protected areas and areas of importance for biodiversity, or restoring forest cover in these areas. In particular, the role of remote-sensing data could complement national forest monitoring systems with a recurrent wall-to-wall assessment with a high frequency of measurement at relatively lower costs. It could also allow for a quick detection of potential impacts, ensuring an adaptive management response to REDD+ actions.

31.   Indigenous peoples and local communities could be effective actors in monitoring trends in biodiversity and impacts and contributions from REDD+ activities. Ground-based information on forest dwelling communities, ownership and user rights of forests are of primary importance for determining the effectiveness of the Cancun safeguards, particularly safeguards c) and d). The Forest COMPASS website,[18] for instance, brings together case studies, resources and analyses on community-based forest monitoring in tropical countries and reveals why community-collected data is essential for ensuring more efficient, effective and equitable forest initiatives, including those under international agendas, such as CBD, UNFCCC REDD+ and FLEGT. Information monitored by these means could be complemented by data provided by Parties in their national reports to the Convention on Biological Diversity to meet Aichi Target 18.

32.   Participatory monitoring approaches, however, require strong governance processes, training and time to ensure that the design is properly planned, implemented and communicated in collaboration with the communities themselves. This is critical to enable their participation in deciding what type of information to gather and how to report on it. Carrying out training on different techniques to verify ground data and equipping community members to validate data products derived from remote sensing and other sources is essential for such an approach to be credible.

33.   Other freely available tools, which could support assessments on the contribution of REDD+ processes to biodiversity, include the Guidelines for Free, Prior and Informed Consent developed by the

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[17] see http://www.bipindicators.net/nationalindicatordevelopment

[18] *http://forestcompass.org/case-studies*

World Wildlife Fund,[19] Guidelines developed by the UN-REDD Programme,[20] the Multiple Benefits Toolbox[21] developed by the UNEP World Conservation Monitoring Centre (UNEP-WCMC), and the Sourcebook on Monitoring Biodiversity for REDD-plus[22] prepared by the Zoological Society of London (ZSL) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). For project-scale initiatives, the Social and Biodiversity Impact Assessment (SBIA) Manual for REDD-plus Projects provides useful guidance that is also relevant at national scales.[23] CBD Technical Series 59: REDD-plus and Biodiversity[24], as well as CBD Technical Series 72: Earth Observation for Biodiversity Monitoring: A review of current approaches and future opportunities for tracking progress towards the Aichi Biodiversity Targets[25] also provide information of benefit for REDD+ monitoring processes.

34.   The UN-REDD Programme has also developed a number of knowledge products and tools[26,27] for countries to draw on when developing their approaches to REDD+ safeguards, including a generic country approach[28] that outlines the main steps that countries may wish to consider when deciding on how to meet the safeguards requirements of UNFCCC.

35.   The note by the Executive Secretary prepared for the sixteenth meeting of the Subsidiary Body (UNEP/CBD/SBSTTA/16/8) also provides general advice on possible indicators and potential mechanisms to assess impacts of REDD+ measures on biodiversity. Further, at its eighteenth meeting, the Subsidiary Body considered the report on issue in progress relating to biodiversity and climate change (UNEP/CBD/SBSTTA/18/13) which identifies a number of procedural elements and tools and measures to support the application of REDD+ safeguards related to biodiversity, as well as elements that could support the implementation of social safeguards for indigenous peoples and local communities. Examples of REDD+ activities and how they may be designed to contribute to the forest relevant Aichi Biodiversity Targets, can be found in an information note (UNEP/CBD/SBSTTA/20/INF/30).

IV.   EXPERIENCES, LESSONS LEARNED AND BEST PRACTICES ON THE CONTRIBUTION FROM REDD-PLUS ACTIVITIES TOWARDS ACHIEVING THE OBJECTIVES OF THE CONVENTION AND THE STRATEGIC PLAN FOR BIODIVERSITY 2011–2020

A.   Brief overview of information from submissions

36.   Through notification 2015-018 dated 17 February 2015, the Executive Secretary invited Parties, other Governments and relevant organizations to submit views, inter alia, on possible indicators to assess the contribution of REDD+ to the Convention on Biological Diversity and on potential mechanisms to monitor impacts on biodiversity from these activities and other ecosystem-based approaches for climate change mitigation. In response, submissions were received from nine Parties (Australia, Belgium, Canada, India, Mexico, Switzerland, Ecuador, Japan and the European Union)[29] and five organizations

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[19] http://awsassets.panda.org/downloads/fpic_working_paper_01_10_14_small.pdf.

[20] http://www.un-redd.org/Launch_of_FPIC_Guidlines/tabid/105976/

[21] The Multiple Benefits Toolbox has been developed for REDD-plus multiple benefits analyses and provides information on the spatial relationship between carbon and other ecosystem services. See http://www.unredd.net/index.php?option=com_content&view=article&id=2289&Itemid=802

[22] http://www.zsl.org/sites/default/files/media/2014-10/ZSL_GIZ_REDD_Sourcebook_2014_0.pdf

[23] http://www.forest-trends.org/publication_details.php?publicationID=2998

[24] https://www.cbd.int/doc/publications/cbd-ts-59-en.pdf

[25] https://www.cbd.int/doc/publications/cbd-ts-72-en.pdf

[26] http://www.un-redd.org/multiple_benefits/sepc_bert/tabid/991/default.aspx

[27] UN-REDD Programme Technical Resource Series 1 - REDD-plus Safeguards information systems Practical Design Considerations, available at http://bit.ly/1KGkbNQ

[28] See Annex III of Technical Resource Document No. 2 - Country Approaches to REDD-plus Safeguards: a Global Review of Initial Experiences and Emerging Lessons http://bit.ly/1ZYhuZO

[29] Views from Germany and Italy are contained in the European Union submission.

(UNEP, the World Wildlife Fund, the Indian Council of Forestry Research and Education, the Indigenous Peoples' International Centre for Policy Research and Education "Tebtebba", and INTACT).

37.   Submissions strongly emphasized trade-offs between indicators that capture the most relevant information for REDD+, versus what is realistically feasible to measure, with most views suggesting that the selection of indicators should focus on the type of monitoring mechanism needed, and on indicators that would be most practical to use, given the existing sources of information and expertise.

38.   Some noted that biodiversity related indicators may prove useful in detecting positive or negative trends on certain biodiversity related features that REDD+ may impact, but that such indicators will not establish causalities between the trend and the REDD+ activity. In order to link the policies and measures implemented for REDD+, to a particular impact — positive or negative — on biodiversity, more than one source would need to be consulted. Specific indicators that build on several existing mechanisms have been proposed by UNEP and WWF, separately, and can be found in an information note (UNEP/CBD/SBSTTA/20/INF/30).

39.   Secondary data sources, including global datasets and freely available online data lists, were also noted. For example, the designation of High Conservation Values (HCV) areas can help identify and monitor critically important environmental and social values in production landscapes, and provide information on the impacts and/or contributions to biodiversity from major sustainability certification schemes, such as the Forest Stewardship Council (FSC). Additional secondary information sources are noted in an information note (UNEP/CBD/SBSTTA/20/INF/30).

40.   Several submissions stressed that the transition from indicators to practical monitoring mechanisms is difficult in a context of limited capacity and resources available. A tiered approach model was suggested to help overcome such challenges. Information note UNEP/CBD/SBSTTA/20/INF/30 presents further details on this type of approach, in line with the framework for integrating biodiversity concerns into national REDD-plus programmes presented in UNEP/CBD/SBSTTA/16/INF/22.[30]

B.   Country examples

41.   With few examples of large-scale REDD-plus implementation on the ground, it is difficult to assess the contributions from REDD+ to the objectives of the Convention on Biological Diversity. However, the success of Brazil in reducing deforestation in recent years shows a positive impact towards the implementation of the objectives of the Convention on Biological Diversity in the context of the REDD objective "to reduce emissions from deforestation".

42.   Since 2005, Brazil has implemented the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon (known by the Portuguese acronym, PPCDAm), which consists of a series of public policies from various sectors, including the creation of new protected areas, which enabled an 80% reduction of deforestation in the Amazon compared to 2004 levels.[31] Through the creation of the Amazon Fund, Brazil also raises resources to finance forest conservation initiatives, including through results-based payments for emission reductions from avoided deforestation. The main objective of the Amazon Fund is to provide support to projects to prevent, monitor and combat deforestation, as well as for the conservation and sustainable use of forests in the Amazon Biome. Activities related to the conservation and sustainable use of biodiversity are eligible for funding. Hence, beyond synergies between actions to reduce deforestation and degradation, and Targets 5 and 11, the capitalization and disbursement of the Fund, whereby results-based payments for REDD+ are reinvested into actions to conserve biodiversity and to promote the sustainable use of its components, provides another example of how REDD+ can contribute to Aichi Biodiversity Target 20.

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[30] Based on Gardner, T. et al. A framework for integrating biodiversity concerns into national REDD-plus programmes. Biol. Conserv. http://dx.doi.org/10.1016/j. biocon.2011.11.018

[31] Website of the Brazilian Ministry of Environment - http://redd.mma.gov.br/ and of the Amazon Fund - http://www.amazonfund.gov.br/

43.   Developing countries participating in REDD+ are at various stages in preparing their Safeguards information systems.[32] Current progress suggests that some are in the process of developing indicators for measuring environmental and social impacts of REDD+, including on biodiversity. Although it is not a requirement, several Safeguards information systems under development are structured around Principles, Criteria and Indicators.

44.   Alternatively, indicators could be used more simply to help organize and present quantitative or qualitative Safeguard information in a transparent and consistent manner. Recalling UNFCCC guidance[33] that Safeguards information systems should "build upon existing systems, as appropriate", practical design considerations, offered by the UN-REDD Programme, note that safeguard indicators may be based on relevant pre-existing indicators associated with existing information systems and sources, in order to avoid additional costs.[34] The development of the Malaysian Safeguards Information System depicts the use of pre-existing indicators, and the potential for inclusion of indicators related to their NBSAP.

45.   In Malaysia, the approach for designing information within the Safeguards Information System is envisaged to have three main components: (a) a narrative description for each Cancun Safeguard in accordance with the national circumstances; (b) progress against a framework of principles, criteria and indicators (PCIs), based on the existing Malaysian Timber Certification Scheme (MTCS), for subnational information on environmental and social safeguard processes and outcomes, coupled with national-level information on policy implementation; and (c) feedback from the public to foster transparency. Efforts have also been taken to incorporate relevant Aichi Biodiversity Targets from the Strategic Plan for Biodiversity 2011–2020 into the safeguards information structure, through periodic reviews of the PCIs, as well as civil society and stakeholder engagement. The PCIs of the existing certification scheme are expected to be revised in 2017 to become more REDD+ relevant.[35]

46.   With regard to synergies in the provision of information for biodiversity and REDD+ objectives, Brazil's Summary of information provides another example of how addressing and respecting the Cancun safeguards can be relevant for reporting on progress towards Aichi Biodiversity Targets 5 and 11 of the Strategic Plan on Biodiversity. Such data could fit under an indicator proposed in document UNEP/CBD/SBSTTA/16/8 "trends in area of forests in protected areas".

47.   In its summary of information, Brazil provided a narrative assessment of how each of the Cancun safeguards were addressed and respected throughout the implementation of actions to reduce emissions from deforestation in the Amazon biome between 2006 and 2010. On Safeguard e), the narrative assessment links the effectiveness of such Safeguard to progress in national policies implementing the objectives of the Convention on Biological Diversity. It also presents data showing that throughout the implementation of the Action Plan for the Prevention and Control of Deforestation in the Legal Amazon, 50 million hectares of protected areas were created. The Summary further mentions that following the trend of the Amazon biome, deforestation in protected areas was significantly reduced.[36]

48.   The exchange of information could go both ways, from REDD+ institutions to institutions in charge of the implementation the NBSAP or vice-versa, as both processes are likely to generate information that could be used by the other. The pace of progress of each process at the national level is therefore likely to determine how relevant institutions under each process are able to support each other. In the interest of cost-effectiveness, Parties may also wish to develop information systems that can serve multiple purposes under both REDD+ and policy objectives of the Convention on Biological Diversity.

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[32] UN-REDD Programme Technical Resource Series 2: Country Approaches to REDD-plus Safeguards: A Global Review of Initial Experiences and Emerging Lessons. Available at : http://bit.ly/1ZYhuZO

[33] UNFCCC Decision 12/CP.17 FCCC/CP/2011/9/Add.2

[34] UN-REDD Technical Resource Series 1: REDD-plus Safeguards information systems: Practical Design Considerations

[35] UN-REDD Technical Resource Series 1: REDD-plus Safeguards information systems: Practical Design Considerations

[36] Summary of information on how the Cancun safeguards were addressed and respected by Brazil throughout the implementation of actions to reduce emissions from deforestation in the Amazon biome between 2006 and 2010 Brasilia, May 2015. http://redd.unfccc.int/files/brazil_safeguards_summary_final20150508.pdf

The national biodiversity monitoring system of Mexico, for example, contemplates the components of the Monitoring, Reporting, and Verification System that will be established as part of its National REDD+ Strategy.

49.   In its submission, the Government of Mexico describes its High Resolution System for Biodiversity Monitoring (known by its Spanish acronym SAR-MOD). The SAR-MOD is a standardized, long-term-monitoring method that intends to estimate ecosystem integrity, by measuring the structure, composition, and function of ecosystems in 33 protected areas and their buffer zones. Data obtained from SAR-MOD will be analysed with complementary data from a Climate Information Platform which will monitor real-time climatic variables in protected areas, as well as a platform for estimating changes in the extension of forests through remote sensing. This system contemplates the components of the Monitoring, Reporting, and Verification System that Mexico will put in place to operate the activities in its REDD+ Strategy. The initiative could therefore be a potential source of information to assess national progress towards elements of Aichi Biodiversity Targets 5, 7, 11 and 15, as well as on forest cover and associated emissions.

50.   Efficient communication and coordination between the individuals and organizations making decisions on the planning and implementation of REDD+ and NBSAPs, and related processes, at different levels, is essential. The information note on national level synergies between REDD+ and national biodiversity strategies and action plans made available for the twelfth meeting of the Conference of the Parties (UNEP/CBD/COP/12/INF/15) underscores this point, with a review of guidance for joint planning under the Convention on Biological Diversity and UNFCCC policy processes and examples of national efforts. The report concludes that the way in which specific REDD+ actions are planned and implemented will determine the extent of synergies with the objectives of the Convention on Biological Diversity. Further work could help to examine how a mutually supportive relationship between actors could continue beyond planning and implementation, into the measurement of progress under these interconnected policy objectives.

51.   Other advancements for assessing impacts and contributions include spatially-explicit projections of future land-use change under a variety of scenarios of REDD+ implementation. For example, the REDD-PAC project[37] generated information on the impact that various options for REDD+ implementation may have on other policy objectives to better inform the choice and location of REDD+ actions.

52.   The REDD-PAC project on modelling land-use change in Brazil: 2000–2050 and in Central Africa: 2000-2030 builds on regional adaptations of the global economic model GLOBIOM, which produces spatially explicit projections of land use based on the demand from different sectors (agriculture, forestry and bioenergy), trade flows and national policies. The results of the model were processed to identify how species of concern in a specific area would be impacted based on future land-use change patterns in different scenarios.

53.   In Brazil, the analysis revealed that the impact from land-use change on species and ecosystems varied in different scenarios of implementation of Brazil's new Forest Code. Compared to business as usual scenarios, enforcing the Forest Code would reduce the number of threatened species significantly impacted by habitat loss by about two-thirds.

54.   The analysis also showed that certain scenarios were associated with higher conversion of natural habitat and the associated impact on species in other ecosystems, such as the dry forests of the Caatinga and woody savannas of the Cerrado. Scenario analysis thus provides not only an examination of the direct influence of a given policy on deforestation rates in the targeted biomes and agricultural production, but also impacts on other biomes, thus allowing flexibility of policy to avoid eventual leakages across biomes and the consequent impacts on biodiversity.

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[37] REDD-PAC project - http://www.redd-pac.org/new_page.php?contents=papers.csv

55.   In the Congo Basin, the management of forest concessions and protected areas, as well as increasing agricultural yields, are potentially important options for achieving REDD+ objectives. The potential impact of changes in the effectiveness of forest concessions and protected areas, and of increasing agricultural yields which were assessed to prevent land-use change, suggest that both protected areas and forest concessions may play an important part in conserving forest cover and associated species habitat. Projections also indicate that increasing agricultural yields on existing croplands may decrease the need for further deforestation and its impact on species. However, this will greatly depend on how such activities are implemented.

V. CONCLUSIONS

56.   In the Paris Climate Change Agreement, REDD+ was officially recognized as one of the ways in which Parties may contribute to limit the concentration of greenhouse gases in the atmosphere and to reach the objective of keeping global warming under 2 degrees Celsius and pursuing efforts to limit it to 1.5 degrees Celsius. Actions to conserve and enhance forests as sinks of greenhouse gases are noted in Article 5 of the Paris Agreement. Two more decisions pertaining to REDD+ were adopted at COP-21, relating to provisions of information on how the Cancun safeguards are being addressed and respected, and to the importance of non-carbon benefits that may result from the implementation of REDD+. Indicators or assessments related to biodiversity and ecosystem services are likely to be needed if Parties wish to measure the "nature, scale and importance of the non-carbon benefits" that they are invited to share on the web platform of UNFCCC and to communicate "for consideration by interested Parties and relevant financing entities".

57.   Several elements of the Warsaw Framework for REDD+ may provide relevant information for an assessment of the contribution of REDD+ to the objectives of the Convention on Biological Diversity. National strategies or action plans may contain information on the nature and location of REDD+ actions which, combined with trends in biodiversity indicators, may help to detect positive or negative impacts of REDD+ on national biodiversity objectives. Data from national forest monitoring systems, especially if spatially explicit and if it distinguishes from different forest types, might be combined with spatially explicit biodiversity data to determine if reductions in forest cover loss and degradation, and an increase of forest restoration, are occurring in areas of importance for biodiversity on a national or global scale. Data from Safeguards information systems and contained in Parties' Summaries of information concerning how safeguards are addressed and respected, especially in relation to Safeguards c), d) and e), may also be relevant for such an assessment.

58.   Information from other existing forest-related processes may also help in assessing the contribution of REDD+ to the objectives of the Convention on Biological Diversity. Specifically, to address forest monitoring needs, FAO has been requested to work in close collaboration with member countries and relevant organizations to prepare a set of voluntary guidelines on national forest monitoring, which takes into account the requirements for REDD+ reporting. Of the 14 principles developed, there are several that address biodiversity issues. Given the multi-purpose focus of forest monitoring systems it is important to understand how the information and knowledge generated by forest monitoring systems will feed into and support the monitoring and assessment of national and international forest-related targets, including relevant Aichi Biodiversity Targets. The potential for these guidelines to assess the impacts and contributions of REDD+ activities to forest biodiversity considerations will need further examination.

59.   Other processes described are the Global Forest Resources Assessments of FAO, regional criteria and indicator processes for sustainable forest management, forest certification and the revised list of indicators for the Strategic Plan for Biodiversity 2011-2020, among other indicator sets and mechanisms.

60.   In particular, the role of remote-sensing data could complement national forest monitoring systems with a recurrent wall-to-wall assessment with a high frequency of measurement at relatively low costs. It could also allow for quick detection of potential impacts, ensuring an adaptive management response to REDD+ actions. The experience of Brazil shows that remote-sensing-based, high-frequency

monitoring of forest cover change can be a crucial component for the implementation of REDD+ actions related to the enforcement of forest legislation.

61.   Views expressed by Parties in their submissions to the Convention on Biological Diversity suggest that the selection of indicators should focus on the type of monitoring mechanism needed, and on indicators which would be most practical to use given existing sources of information and expertise. Specific indicators that build on several existing monitoring mechanisms were also suggested to help determine positive or negative impacts that specific REDD+ actions could have on biodiversity. Secondary data sources, including global data sets and freely available online data lists, were also noted.

62.   Assessing the current contribution of REDD+ to the objectives of the Convention on Biological Diversity is difficult given the few examples of large-scale REDD+ implementation on the ground. However, the case of Brazil in reducing deforestation provides an example of a positive contribution towards the implementation of the objectives of the Convention on Biological Diversity.

63.   Some countries are developing and/or revising existing indicators for measuring environmental and social impacts of REDD+. The development of the Malaysian Safeguards information system provides an example of the use of pre-existing indicators, as well as the potential for including indicators related to their NBSAP. The summary of information from Brazil provides another example of how addressing and respecting the Cancun safeguards can be relevant for reporting on progress towards Aichi Targets 5 and 11. A number of tools are available to support Parties in using biodiversity information and indicators throughout REDD+ stages, from the planning of actions to the gathering of information on how safeguards are addressed and respected.

64.   The importance of efficient communication and coordination between the individuals and organizations making decisions on the planning and implementation of REDD+ and NBSAPs, and related processes, was presented in the note by the Executive Secretary on national-level synergies between REDD+ and national biodiversity strategies and action plans: a review of current guidance and national efforts (UNEP/CBD/COP/12/INF/15). Further studies of country practices could be useful to examine how a mutually supportive relationship between actors could continue beyond planning and implementation into the measurement of progress under these interconnected policy objectives.

65.   Other advancements for assessing impacts and contributions include spatially explicit projections of future land-use change under a variety of scenarios of REDD+ implementation. The results from model projections realized in Brazil and the Congo Basin help to identify how ecosystems and species of concern in a specific area would be impacted based on future land use change patterns based on different scenarios.

66.   Determining the contribution or impact of REDD+ to the Strategic Plan for Biodiversity 2011-2020 should be addressed on a national scale through an assessment of the contribution or impact of nationally specific REDD+ activities in the context of nationally specific biodiversity objectives and priorities. Data collected by countries through the use of indicators to track progress on their NBSAPs, for example, could provide crucial baseline information on the state of some of the elements with which safeguards are concerned, prior to the start of REDD+ implementation. This potential should be pursued in the preparations for the sixth national reports to the Convention on Biological Diversity.

67.   Integrating biodiversity considerations into REDD+ planning and monitoring systems has the potential to deliver significant benefits, including cost-effectiveness. Moreover, monitoring and assessing impacts on biodiversity could help the REDD+ planning process to integrate emerging issues, as they may occur, ensuring an adaptive management approach.

68.   Finally, the demonstration that REDD+ can generate multiple environmental and social benefits beyond carbon could garner broader support for REDD+ processes and raise corresponding co-funding. Respecting the Cancun safeguards on the rights, knowledge and participation of indigenous peoples and local communities is also likely to ensure the long-term acceptability of national REDD+ programmes.

69.   Further capacity-building and support for all phases of REDD+, through guidelines and initiatives such as those developed by FAO, the UN-REDD Programme, UNEP-WCMC, the Forest Carbon

Partnership Facility, the Global Environment Facility and the Convention on Biological Diversity as well as existing regional criteria and indicator processes, and other relevant organizations, are required to continue to promote country efforts to integrate biodiversity considerations into national REDD+ strategies or action plans, national forest monitoring systems and Safeguards information systems.

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