



Convention on Biological Diversity

Distr.
GENERAL

UNEP/CBD/SBSTTA/18/17
24 April 2014

ORIGINAL: ENGLISH

SUBSIDIARY BODY ON SCIENTIFIC TECHNICAL AND TECHNOLOGICAL ADVICE

Sixteenth meeting
Montreal, 23-27 June 2014
Item 9.7 of the provisional agenda*

CONSIDERATION OF ISSUES IN PROGRESS: HEALTH AND BIODIVERSITY

Note by the Executive Secretary

I. INTRODUCTION

1. The Vision of the Strategic Plan for Biodiversity, 2011-2020 (decision X/2) highlights the linkages between biodiversity and human well-being: “By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people”. Aichi Biodiversity Target 14 focuses explicitly on ecosystem services that contribute to human health, livelihoods and well-being: “By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.”

2. Various aspects of the nexus between health and biodiversity have been examined under the Convention, including: food and nutrition;¹ water supply;² disease risk linked to bushmeat;³ and disaster risk-reduction. Since the publication of the Millennium Ecosystem Assessment, there has been also greater attention in general to the links between biodiversity, ecosystem services and human well-being. Aichi Biodiversity Target 14 calls for a more coordinated focus on the linkages between health and biodiversity. Work on biodiversity-health linkages also contributes to the mainstreaming of biodiversity in the post-2015 development agenda (in follow-up to decision XI/22).

* UNEP/CBD/SBSTTA/18/1.

¹ <http://www.cbd.int/agro/food-nutrition/default.shtml>

² <http://www.cbd.int/doc/publications/cbd-ts-60-en.pdf>

³ See the revised recommendations of the CBD Liaison Group on Bushmeat, Point 9: “*Health and epidemiology*” (decision XI/25).

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3. The Conference of the Parties, at its ninth, tenth and eleventh meetings, has called for strengthened cooperation with the World Health Organization (WHO) and other organizations on health and biodiversity issues. Specifically, in paragraph 17 of decision X/20, the Conference of the Parties requested the Executive Secretary (i) to further strengthen collaboration with WHO and other relevant organizations, with a view to promoting the consideration of biodiversity issues in health programmes and plans; (ii) to investigate how implementation of the Strategic Plan for Biodiversity 2011-2020 can best support efforts to address global health issues, and thereby facilitate consideration of biodiversity within national health strategies, in line with the World Health Declaration, and in support of the Millennium Development Goals; (iii) to explore avenues for bridging the gaps between work being carried out to address the impacts of climate change on public health and work to address the impacts of climate change on biodiversity; and to continue collaborating with the Co-Operation on Health and Biodiversity (COHAB) Initiative and other relevant organizations to support the mainstreaming of biodiversity issues into health policy and action plans; (decision X/20, paragraph 17).

4. At its eleventh meeting, the Conference of the Parties welcomed the strengthening of collaboration between the Convention on Biological Diversity and the World Health Organization, and other relevant organizations and initiatives, and requested the establishment of a joint work programme with the World Health Organization, and other relevant organizations, to support the contribution that the Strategic Plan for Biodiversity 2011–2020 can make to achieving human health objectives (decision XI/6, paragraph 29).

5. The Conference of the parties also invited Parties, other Governments and relevant organizations to raise awareness of the links between biodiversity and health issues so as to achieve mutual benefits and contribute to meeting relevant Aichi Biodiversity Targets, and to report thereon to the Conference of the Parties at its twelfth meeting (decision XI/6, paragraph 27).⁴

6. Further, the Conference of the Parties requested the Executive Secretary to collaborate with a number of organizations, including WHO, involved in poverty eradication, human health, food security and gender issues in the process of developing Sustainable Development Goals (SDGs), taking into account the outcomes of the Rio+20 Conference (decision XI/22, paragraph 11 (c)).

7. Accordingly, the Secretariat of the Convention is working with WHO and a range of organizations and other partners on biodiversity and health activities to contribute to the following objectives:

(a) To promote the enhanced use of biodiversity in programmes contributing to human health;

(b) To raise awareness of the importance of biodiversity conservation and sustainable use for human health co-benefits;

(c) To contribute to implementation of the Strategic Plan for Biodiversity 2011–2020 and support the achievement of the Millennium Development Goals, and to the advancement of the Sustainable Development Goals.

8. This note provides a summary of activities carried out or planned in response to decisions X/20 and XI/29 on biodiversity and health. Work on assessing and sharing knowledge on the interlinkages between biodiversity and human health is addressed in section II; work on capacity-building to promote biodiversity and health co-benefits is addressed in section III; while work on strengthening collaboration and partnerships in general for biodiversity and health is addressed in section IV.

⁴ In addition, the Conference of the Parties requested the Executive Secretary to develop further the indicators of progress towards the achievement of the Aichi Biodiversity Targets (decision XI/3) that may be relevant to the links between biodiversity and health, including trends in benefits that humans derive from selected ecosystem services, trends in health and well-being of communities that depend directly on local ecosystem goods and services, and trends in the nutritional contribution of biodiversity and food composition. This work is being developed in the context of GBO-4 as well as the state of knowledge review discussed in section II of this note.

9. The Executive Secretary gratefully acknowledges voluntary funds provided by the European Commission, and the Governments of France, Japan and Norway for support to the activities described herein.

II. STATE OF KNOWLEDGE REVIEW ON THE INTERLINKAGES BETWEEN BIODIVERSITY AND HUMAN HEALTH

10. The Millennium Ecosystem Assessment (2005) and the Intergovernmental Panel on Climate Change (2007) highlighted that human health is affected by the state of the global environment and the health of ecosystems. Additionally, the third edition of the Global Biodiversity Outlook (GBO) of the Convention on Biological Diversity (CBD) concluded that current trends are bringing us closer to a number of potential tipping points that would catastrophically reduce the capacity of ecosystems to provide the essential services upon which we all depend for life.

11. However, the interlinkages among biodiversity, ecosystem services and human health are complex and we do not have a complete understanding of cause and effect relationships. Ongoing inter-disciplinary research aims to develop a more thorough understanding of these fundamental interlinkages in order to improve the action on both health and biodiversity. To take stock of current knowledge, and facilitate mutual learning between the health and biodiversity-related sectors, WHO and the Secretariat of the Convention on Biological Diversity are jointly coordinating an effort to prepare a state of knowledge review on the interlinkages between biodiversity and human health.

12. To initiate the development of the knowledge review on the interlinkages between biodiversity and human health, on 15-16 January 2014, the Convention on Biological Diversity and WHO jointly held an initial meeting of authors at WHO headquarters in Geneva, Switzerland. The objectives of the meeting were to: (i) to define the structure of the technical volume; (ii) to further discuss biodiversity and health knowledge and linkages to be included in the publication; (iii) to collaboratively examine common areas of scientific interest in light of respective mandates; and (iv) to discuss respective contributions to the technical volume, roles and future collaborative steps. The meeting gathered 25 representatives from CBD, WHO, as well as experts from Bioversity International, COHAB Initiative, DIVERSITAS, Ecohealth Alliance, FIOCRUZ, Health & Ecosystems: Analysis of Linkages of the Wildlife Conservation Society and the Harvard School of Public Health.

13. The study will comprise three main parts:

(a) Part I will introduce concepts such as the social and environmental determinants of health, biodiversity and ecosystem services, and provide a broad overview of the different ways in which biodiversity and health are linked. It will also consider the common drivers of change that impact on both health and biodiversity, and examine approaches such as “One Health”, “Ecohealth” and the ecosystem approach that attempt to unite different fields;

(b) Part II will examine how biodiversity is related to specific thematic areas at the biodiversity-health nexus including: water and air quality; food and nutrition; infectious diseases; microbial communities and non-communicable diseases; physical, mental and cultural well-being; and traditional and modern medicine;

(c) Part III will explore how health and biodiversity policies and programmes can be improved in light of a better understanding of health-biodiversity linkages, and how these issues can be reflected in land-use policy, climate-change policy and disaster risk reduction. It will survey available tools for this purpose.⁵

⁵ This will further contribute to the request in paragraph 9 of decision IX/27 to support the work of Parties on biodiversity and health related issues above, including by developing compendiums of tools developed under the Convention that could be used for capacity-building and awareness-raising in the health sector.

14. The study will attempt to identify gaps in existing scientific literature as well as policy gaps. The study will also include case studies that demonstrate the need for integration of health and biodiversity policies, particularly in developing countries.

15. The study is being prepared by a group of authors drawn from both the health and biodiversity sectors. The study will also take into account comments from a round of review by Parties, experts and stakeholders. There will be an opportunity for review by Parties to the Convention prior to the finalization of the study, scheduled for publication at the twelfth meeting of the Conference of the Parties. The consultation process will also seek the views of indigenous and local communities on issues relevant to traditional medicines, traditional food cultures and associated social, economic and cultural considerations.

16. A note summarizing the emerging key messages from the state of knowledge review will be made available for peer-review at <http://www.cbd.int/sbsta/preparation/>.

III. DEVELOPING CAPACITY TO PROMOTE BIODIVERSITY AND HEALTH CO-BENEFITS

17. The Secretariat and the World Health Organization, together with the Oswaldo Cruz Foundation (FIOCRUZ) and other partners, have initiated a series of regional capacity-building workshop on the interlinkages between health and biodiversity. These workshops aim to support national efforts to reflect health issues in national biodiversity strategies and action plans and to develop/update action plans that take into account health and biodiversity concerns and opportunities at the national and regional levels as a contribution to the Strategic Plan for Biodiversity 2011-2020, in particular Target 14. More specifically, they aim to strengthen capacity at national and regional levels to: (i) identify policy information gaps on the links between health and biodiversity; (ii) facilitate cross-sectoral communication and collaboration, particularly between ministries of health and environment; (iii) examine inter-ministry implementation challenges and opportunities in developing countries, in support of the implementation of the Strategic Plan for Biodiversity 2011-2020 and the Millennium Development Goals; (iv) facilitate the integration of health and biodiversity concerns into updated national biodiversity strategies and action plans; and (v) strengthen the implementation Strategic Plan for Biodiversity 2011-2020, with a focus on human health and well-being.

18. Workshops for each WHO region are planned. The report of the first workshop, for Latin America and the Caribbean region, co-convened in September 2012 with the Pan American Health Organization (PAHO), was reported to the eleventh meeting of the Conference of the Parties.⁶ The report is available on the CBD website at: <http://www.cbd.int/en/health/americas>.

19. A second regional workshop, for the African region, was jointly convened with WHO Regional Office for Africa and held from 2-5 April 2013 in Maputo, Mozambique, with generous financial support from the Government of Japan and FIOCRUZ. The workshop provided an opportunity to exchange national or subnational experiences and practices for implementation, and to pursue new areas of regional cooperation to address issues relevant to health thereby contributing to the fulfillment of the Aichi Biodiversity Targets.

20. Fifty-six participants attended the regional workshop in Africa including government-nominated experts from 24 African countries, representing ministries of environment and ministries of health. Nominations for the latter were facilitate by the WHO Regional Office for Africa. Members of local and indigenous communities in Africa were also invited to attend the workshop. Several experts with relevant regional expertise also contributed to the success of the workshop by delivering specific thematic presentations on several issue areas at the biodiversity-health nexus including, *inter alia*, zoonotic and infectious disease, food and nutrition, waterborne diseases, traditional medicine, and gender and development. The workshop was held in English, French and Portuguese.

6 <http://www.cbd.int/doc/health/cop-11-inf-27-en.pdf>

21. In addition to the general objectives outlined above, the regional workshop for Africa sought to identify possible joint activities to achieve health and biodiversity co-benefits for consideration in national biodiversity strategies and action plans (NBSAPs), national health strategies and national joint plans of action (NPJAs) under the Libreville Declaration on Health and Environment in Africa, and to promote transboundary/regional cooperation and support networks on health and biodiversity issues and strategies.
22. Following each of the workshops, participants were encouraged to report back on the workshop in their countries; to include issues relevant to health and well-being in their national biodiversity strategies and action plans; to contact the focal points of other environmental conventions and focal points for health to collaborate on health and biodiversity issues in an effort to encourage cross-sectoral communication.
23. The final conclusions arising from the African workshop are included in annex I to this note. The full workshop report is available in electronic format at: <http://www.cbd.int/doc/meetings/health/wshb-afr-01/official/wshb-afr-01-02-en.pdf> and is also available on the CBD Biodiversity and Health website at <http://www.cbd.int/en/health/africa>.
24. To follow up on the regional capacity-building workshop on the interlinkages between biodiversity and health for Africa, jointly convened by the Secretariat of the Convention on Biological Diversity and WHO, the Secretariat contributed inputs for the development of a regional framework and action plan for biodiversity and health in Africa, in conjunction with the World Health Organization regional office for Africa. These inputs were included in the consolidated compendium of strategies and interventions submitted to the Second Inter-Ministerial Conference on Health and Environment in Africa, held from 23-26 November 2013 in Luanda, Angola.
25. Subject to the availability of funding, additional regional capacity-building workshops on the interlinkages between biodiversity and human health are anticipated in 2015 and 2016, including for the following WHO regions: South-East Asia, Western Pacific, Eastern Mediterranean, and the WHO Europe region.

IV. STRENGTHENING COLLABORATION AND PARTNERSHIPS FOR BIODIVERSITY AND HEALTH

26. The Secretariat reported on collaborative activities with the World Health Organization in document UNEP/CBD/COP/11/INF/27. As noted above, the Secretariat is currently working with WHO to develop a state of knowledge review on the interlinkages between health and biodiversity (see section II) and on a series of regional capacity-building workshops (see section III). The two secretariats are also discussing the development of a memorandum of cooperation.
27. Together with the World Health Organization, the Convention on Biological Diversity also provided inputs and prepared distribution materials on biodiversity and human health linkages, for the meetings of the Open Working Group on Sustainable Development Goals (see <http://www.cbd.int/development/>).
28. The Secretariat has also strengthened its collaboration with FIOCRUZ by co-convening regional capacity-building workshops and carrying out a number of collaborative activities.
29. As noted above, the Secretariat, together with WHO is collaborating with a large number of partners in developing the state of knowledge review. These include: Bioversity International, COHAB Initiative, DIVERSITAS, Ecohealth Alliance, FIOCRUZ, Food and Agriculture Organization of the United Nations, Harvard School of Public Health, International Union for the Conservation of Nature, Loyola Sustainability Research Centre (LSRC), Organisation for Animal Health (OIE), United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), the World Agroforestry Centre (ICRAF) and the World Conservation Society, and contributions from several other experts from relevant organizations and academic institutions.
30. The Biodiversity and Community Health Initiative, launched at the eleventh meeting of the Conference of the Parties, is an initiative of the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS), in collaboration with the Secretariat, other United Nations agencies,

international organizations and NGOs,⁷ to develop and mainstream community health approaches in the context of sustainable development.⁸ The overall objective of the Initiative is to promote knowledge, awareness and sustainable use of biological resources, and the development of capacity of local populations, especially reliant on these resources for their health and well-being. The work of the initiative specifically aims to: (a) promote synergies between biodiversity conservation and health security; (b) promote the integration of traditional medicinal practices and mainstream health systems; (c) promote the development of sustainable enterprise and livelihoods; (d) support the development of capacity for self-reliant health care in local communities; (e) promote the integration of traditional, local as well as scientific knowledge at the biodiversity-health nexus, and; (f) promote the sustainable use of biodiversity for food, nutrition and health.

31. The new multi-stakeholder initiative envisages a global network of centers of excellence addressing issues of biodiversity, health, traditional knowledge, and community well-being. The Initiative builds on its partners' long-standing experiences in the field of policy research and advocacy, capacity development, networking and knowledge exchange on issues related to biodiversity and health. To further understanding and awareness, and to contribute to the building of more robust, peer-reviewed evidence about the importance of the interlinked domains of biodiversity conservation, health and nutritional security goals, and the use of different knowledge systems to achieve them, the Initiative aims to conduct a wide range of activities including: policy research, capacity development, policy advocacy, as well as supporting establishment of centres of excellence.

32. The partners are working together to conduct research that examines the flows of biophysical resources to the food and health sectors; to enable participatory assessment of biological resource use and health practices; and to engage with relevant policy bodies and instruments. The Initiative will contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020 and its 20 Aichi Targets, as well as the United Nations' emerging post-2015 Sustainable Development Goals (SDGs). Targeted inputs are also being provided to specific policy forums, including those of the Secretariat, WHO, Committee on Food Security, Open Working Group on Sustainable Development Goals on relevant aspects related to ecosystem services, sustainable use, public health, access to health and livelihood security.

33. A CBD website for biodiversity and health activities was launched at the margins of the eleventh meeting of the Conference of the Parties. It features specific biodiversity and health collaborative activities and is complemented by links to new outreach materials and existing resources to target international and national policymakers, the private sector, civil society organizations and local communities to better communicate the ways human health depends on biodiversity. The website is available at: www.cbd.int/en/health

34. The twelfth meeting of the Conference of the Parties will review progress made to achieve the Aichi Biodiversity Targets. Activities carried out in support of health and biodiversity will contribute to this assessment. In its ongoing effort to foster the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets, in particular Target 14, and the emerging post-2015 Sustainable Development Goals, the Secretariat will continue to further consolidate its collaboration with the World Health Organization and other relevant partners, with a view to promoting biodiversity and health considerations. Subject to the availability of funding beyond 2014, additional collaborative activities will be delivered, including capacity-building workshops in the remaining regions; technical and outreach publications based on the state of knowledge review on the interlinkages between biodiversity and human health; and practical tools that support the implementation of integrated health and biodiversity efforts at national levels.

7 The Biodiversity and Community Health Initiative draws on the educational and research strengths of the UNU Institute for the Advanced Study of Sustainability in both biodiversity and traditional knowledge. Also on the Steering Committee are the CBD Secretariat, Biodiversity International, COMPAring and Supporting Endogenous Development (COMPAS), the Foundation for Revitalisation of Local Health Traditions (FRLHT), the International Union for Conservation of Nature (IUCN) Medicinal Plant Specialist Group, the United Nation Development Programme's Equator Initiative, the United Nations Environment Programme (UNEP), wildlife trade monitoring network TRAFFIC, and the National Biodiversity Authority of India.

Annex

**CONCLUSIONS OF THE REGIONAL WORKSHOP ON THE INTERLINKAGES BETWEEN
BIODIVERSITY AND HEALTH FOR AFRICA**

1. Addressing biodiversity-health linkages will contribute not only to achieving health outcomes and biodiversity outcomes but also contribute to poverty reduction, disaster-risk reduction, and sustainable development more broadly, including in the context of the post-2015 development agenda.
2. The relationship between biodiversity and health is multifaceted and complex. It is part of the broader relationship between the environment and health, but not identical to it.
3. The components of biodiversity and ecological processes underpinned by biodiversity support health in many ways:
 - (a) Plant and animal species are sources of traditional medicines, and together with microorganisms, are sources of and models for pharmaceuticals;
 - (b) Plant and animal species, wild and domesticated, and their genetic varieties and races, are sources of food, providing the full range of essential nutrients;
 - (c) Genetic diversity and species diversity underpin ecosystem resilience and provide options for crops and livestock improvement; both of these allow for adaptation to changing circumstances, including climate change;
 - (d) Biodiversity underpins ecosystem functioning, which allows ecosystems to provide services such as clean water, support agricultural productivity (e.g.: through pollination, nutrient cycling, etc.), and regulation of diseases.
4. Biodiversity and ecosystems may also be related to adverse health effects, in some cases, and particularly when ecosystems are not well managed, notably through disease organisms.
5. The health benefits of biodiversity are largely dependent on social dimensions (e.g.: gender, poverty, etc.) and may be specific to local ecosystems and cultures. The different roles of men and women in access to, and the use, control and management of natural resources and the implications for health, as well as the different responsibilities of men and women for health care, need to be recognized. Poor and vulnerable communities, and women and children, are often particularly dependent on biodiversity for food, clean water and medicines.
6. Traditional indigenous and local knowledge, as well as conventional scientific knowledge, associated to biodiversity can be very important in realising the health benefits of biodiversity.
7. The Convention on Biological Diversity and the Nagoya Protocol provide an international legal framework for the fair and equitable sharing of benefits arising from the use of genetic resources, and associated traditional knowledge.
8. The linkages between biodiversity and health can be enhanced in several ways:
 - (a) By promoting the health benefits provided by biodiversity set out in paragraph 3. In turn this provides a rationale for the conservation and sustainable use of biodiversity as well as the fair and equitable sharing of benefits;
 - (b) By managing ecosystems to reduce the risk of infectious diseases, including zoonotic and vector-borne diseases, for example by avoiding ecosystem degradation and limiting or controlling human-wildlife contact;
 - (c) By addressing drivers of environmental change (deforestation and other ecosystem loss and degradation and chemical pollution) that harm biodiversity and health, including direct impacts on health, and those mediated by biodiversity loss;
 - (d) By promoting lifestyles that might contribute to both health and biodiversity outcomes (e.g.: protecting traditional foods and food cultures, promoting dietary diversity, etc.)

(e) By addressing the unintended negative impacts of health interventions on biodiversity (e.g.: antibiotic resistance, contamination from pharmaceuticals) and by incorporating ecosystem concerns into public health policies, and also by addressing the unintended negative impacts of biodiversity interventions on (e.g.: effect of protected areas on access to food, medicinal plants, etc.).

9. Implementation of the Libreville declaration provides opportunities to integrate biodiversity into national health strategies and the national joint plans of action for health and the environment.

10. There is a need to integrate health-biodiversity linkages into national health strategies, and the work of national institutes of health and other national plans and programmes and relevant legislation. Health-biodiversity linkages should be considered in environmental impact assessments and strategic environmental assessments, as well as in health impact assessments. Economic valuation can be a useful tool for assessing the contribution of biodiversity and ecosystems to health.

11. The experience of the countries in the African region in following up on the Libreville declaration, including through the elaboration of situation analysis and needs assessment (SANAs) and national joint plans of action, and through intersectoral multi-disciplinary country task teams, provides useful examples and lessons for other countries and for the integration of biodiversity and health more generally. However, in some countries, there is a need to further strengthen cooperation and joint work between health and environment ministries, including the establishment of cross-sectoral initiatives. In some countries there is also a need and an opportunity to identify more clearly the specific linkages between biodiversity and health within the broader area of environment and health. This should include recognition of the Strategic Plan for Biodiversity 2011-2020 and its 20 Aichi Targets. There is a need for increased funding for these activities in most countries.

12. The ongoing revision of NBSAPs provides an opportunity to reflect health-biodiversity linkages into biodiversity planning processes. The Strategic Plan for Biodiversity 2011-2020 including its 20 Aichi Targets provides a useful framework. Target 14 is particularly relevant. Other relevant guidelines have been developed under the Convention on Biological Diversity and by WHO, among others.

13. There is a need to develop practical tools to facilitate the integration of biodiversity into health strategies (and vice-versa), for example through guidelines, or simple checklists of issues, noting the need to distinguish between the specific issues related to biodiversity and the more general environmental issues.

14. There is a need to further share knowledge and experiences related to biodiversity-health linkages among countries and with international and national partners. A mechanism to facilitate this should be promoted and funded. .

15. There is a need to promote training and capacity-building of professionals in both sectors, as well as indigenous and local communities.

16. There is a need to need to raise awareness and develop education programmes on the importance of health-biodiversity linkages at various levels, so as to enhance support for policies and their implementation. There is also a need to promote further research on these issues, including by strengthening pan-African research collaboration to address knowledge gaps and to incorporate social and cultural perspectives as well as religious values that serve to protect biodiversity and promote health.

17. WHO and CBD, together with FIOCRUZ and other relevant organizations, are encouraged to further develop their joint work programme on health-biodiversity linkages, including further work to synthesize and analyse relevant scientific information and to support the development of a roadmap for further action, including work by countries in the framework of the Libreville Declaration on Health and Environment in Africa as well as links with other relevant international conventions, protocols and agreements.