Convention on Biological Diversity

World Health Organization

27 March 2012

Workshop on the Interlinkages between Human Health and Biodiversity

Jointly Convened by the World Health Organization (WHO) and the Secretariat of the Convention on Biological Diversity (SCBD)

1.30 p.m.–5.30 p.m. on Monday, 2 April 2012, Salle B, WHO Headquarters, Geneva

PROVISIONAL AGENDA

Workshop objectives:

1. To share biodiversity and health knowledge;
2. To collaboratively examine common areas of work and potential joint work activities in the light of the respective mandates; and
3. To discuss challenges, ways to overcome barriers and establish future collaborative steps.

Proposed programme:

1.30 p.m.–1.40 p.m.	Welcome and opening remarks by Ms. Maria Neira, Director of Public Health and Environment (PHE), WHO
1.40 p.m.–2 p.m.	Introduction by Mr. David Cooper, Principal Officer, SCBD Strategic Plan for Biodiversity 2011-2020 and the health linkages to the Aichi Biodiversity Targets, by Ms. Kathryn Campbell and Mr. David Cooper, SCBD
2 p.m.–2.20 p.m.	What does biodiversity mean for human health? Global health issues and their interlinkages with biodiversity, by Mr. Diarmid Campbell-Lendrum, WHO
2.20 p.m. –3.15 p.m.	Short presentations (5 minutes) by WHO Officers on global health topics (e.g., food and nutrition, water, traditional medicine, infectious diseases and disease regulation, physical mental and cultural well-being) and their potential interconnections with biodiversity
3.15 p.m.–3.30 p.m.	Coffee break
3.30 p.m.–4 p.m.	Short presentations (5 minutes) from external organizations on their key interests
4 p.m.–5.20 p.m.	Open discussion on select priority areas (as decided by attendees) for potential joint work activities including challenges and opportunities, moderated by Mr. David Cooper (SCBD) and Mr. Diarmid Campbell-Lendrum (WHO)
5.20 p.m.–5.30 p.m.	Closing remarks by Mr. David Cooper (SCBD) and Mr. Diarmid Campbell-Lendrum (WHO)

Annex I: The Strategic Plan for Biodiversity 2011-2020 and Aichi Biodiversity Targets

Overview of the Strategic Plan

VISION

The vision of this Strategic Plan is a world of "Living in harmony with nature" where "By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."

THE MISSION OF THE STRATEGIC PLAN

Take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication.

To ensure this, pressures on biodiversity are reduced, ecosystems are restored, biological resources are sustainably used and benefits arising out of utilization of genetic resources are shared in a fair and equitable manner; adequate financial resources are provided, capacities are enhanced, biodiversity issues and values mainstreamed, appropriate policies are effectively implemented, and decision-making is based on sound science and the precautionary approach.

STRATEGIC GOALS AND THE 20 AICHI BIODIVERSITY TARGETS

The Strategic Plan includes 20 targets, organized under five strategic goals (for further information www.cbd.int/sp/). The goals and targets provide a flexible framework for the establishment of national or regional targets. Parties to the CBD are invited to set their own targets within this flexible framework, taking into account national needs and priorities, while also bearing in mind national contributions to the achievement of the global targets.

Strategic goal A. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

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

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

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

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

Strategic goal B. Reduce the direct pressures on biodiversity and promote sustainable use

***Target 5*:** By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

***Target 6*:** By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

***Target 7*:** By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

***Target 8*:** By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Annex I (continued)

***Target 9*:** By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

***Target 10*:** By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Strategic goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

***Target 11*:** By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes.

***Target 12*:** By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

***Target 13*:** By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Strategic goal D: Enhance the benefits to all from biodiversity and ecosystem services

***Target 14*:** 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.

***Target 15*:** By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.

***Target 16*:** By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.

Strategic goal E. Enhance implementation through participatory planning, knowledge management and capacity building

***Target 17*:** By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.

***Target 18*:** By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels

***Target 19*:** By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

***Target 20*:** By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

Annex I (continued)

Health Sector Linkages to the Aichi Biodiversity Targets (Draft for discussion) –

Biodiversity and Health Topic	Health Sector Opportunity	Biodiversity Sector Opportunity (Aichi Biodiversity Target)
1. Food Species, varieties and breeds, including domesticated and wild components; Diversity of diet; Ecology of production systems; Total demand on resources	Direct responsibility • Recognize and promote dietary diversity, food cultures and their contribution to good nutrition • Recognize synergies between human health and sustainable use of biodiversity (e.g., moderate consumption of meat) *Indirect responsibility:* • *Promote sustainable production, harvesting and conservation of agricultural biodiversity*	T1 (values of biodiversity) T4 (sustainable production and consumption) T6 (sustainable harvesting) T7 (sustainable management) T13 (genetic diversity) T14 (ecosystem services)
2. Water Water quantity, quality and supply	Direct responsibility: • Integrate ecosystem management considerations into health policy *Indirect responsibility:* • *Promote protection of ecosystems that supply water and promote sustainable water use*	T1 (values of biodiversity) T8 (reducing pollution) T11 (protected areas) T14 (ecosystem services)
3. Disease regulation Ecosystem integrity and diversity	Direct responsibility: • Integrate ecosystem management considerations into health policy *Indirect responsibility:* • *Promote ecosystem integrity*	T1 (values of biodiversity) T9 (invasive alien species) T14 (ecosystem services)
4. Medicine Traditional medicines; Drug development (genetic resources and traditional knowledge)	Direct responsibility: • Recognize contribution of genetic resources and traditional knowledge to medicine *Indirect responsibility:* • *Protect genetic resources and traditional knowledge* • *Ensure benefit sharing*	T1 (values of biodiversity) T13 (genetic diversity) T14 (ecosystem services) T16 (Nagoya Protocol) T18 (local/traditional knowledge)
5. Physical, mental and cultural well-being Physical health benefits; Benefits for mental health; Cultural/spiritual enrichment	Direct responsibility: • Integrate “value of nature” into health policy *Indirect responsibility:* • *Promote protection of values, species and ecosystems*	T1 (values of biodiversity) T11 (protected areas) T12 (preventing extinction) T13 (genetic diversity) T14 (ecosystem services)
6. Adaptation to climate change Ecosystem resilience; Genetic resources (value of "options” for adaptation)	*Indirect responsibility:* • *Promote ecosystem resilience and conservation of genetic resources*	T1 (values of biodiversity) T10 (vulnerable ecosystems) T14 (ecosystem services) T15 (ecosystem resilience)

Annex II: Global Health Issues

What does biodiversity mean for human health?

Biodiversity underpins life on Earth, and refers to the variety found in biota, from genetic makeup of plants and animals to cultural diversity.

People depend on biodiversity in their daily lives, in ways that are not always apparent or appreciated. Human health ultimately depends upon ecosystem products and services (such as availability of fresh water, food and fuel sources) which are requisite for good human health and productive livelihoods. Biodiversity loss can have significant direct human health impacts if ecosystem services are no longer adequate to meet social needs. Indirectly, changes in ecosystem services affect livelihoods, income, local migration and, on occasion, may even cause political conflict.

Additionally, biophysical diversity of microorganisms, flora and fauna carry important benefits for biological, health, and pharmacological sciences. Significant medical and pharmacological discoveries are made through greater understanding of the earth's biodiversity. Loss in biodiversity may limit discovery of potential treatments for many diseases and health problems.

Threats to biodiversity and health

There is growing concern about the health consequences of biodiversity loss and change. Biodiversity changes affect ecosystem functioning, and significant disruptions of ecosystems can result in impacts on life-sustaining ecosystem goods and services. Biodiversity loss also means that we are losing, before discovery, many of nature's chemicals and genes, of the kind that have already provided humankind with enormous health benefits.

Specific pressures and linkages between health and biodiversity include the following:

Nutritional impact of biodiversity
Biodiversity plays a crucial role in human nutrition through its influence on world food production, as it ensures the sustainable productivity of soils and provides the genetic resources for all crops, livestock, and marine species harvested for food. Access to a sufficiency of a nutritious variety of food is a fundamental determinant of health.

Nutrition and biodiversity are linked at many levels: the ecosystem, with food production as an ecosystem service; the species in the ecosystem; and the genetic diversity within species. Nutritional composition between foods and among varieties/cultivars/breeds of the same food can differ dramatically, affecting micronutrient availability in the diet. Healthy local diets, with adequate average levels of nutrients intake, necessitate maintenance of high biodiversity levels.

Intensified and enhanced food production through irrigation, use of fertilizer, plant protection (pesticides) or the introduction of crop varieties and cropping patterns affect biodiversity, and thus have impacts on global nutritional status and human health. Habitat simplification, species loss and species succession often enhance communities' vulnerabilities as a function of environmental receptivity to ill health.

Importance of biodiversity for health research and traditional medicine
Traditional medicine continues to play an essential role in health care, especially in primary health care. Traditional medicines are estimated to be used by 60 per cent of the world's population and in some countries are extensively incorporated into the public health system. Medicinal plant use is the most common medication tool in traditional medicine and complementary medicine worldwide. Medicinal plants are supplied through collection from wild populations and cultivation. Many communities rely on natural products collected from ecosystems for medicinal and cultural purposes, in addition to food.

Although synthetic medicines are available for many purposes, the global need and demand for natural products persists for use as medicinal products and biomedical research that relies on plants, animals and microbes to understand human physiology and to understand and treat human diseases.

Infectious diseases

Human activities are disturbing both the structure and functions of ecosystems and altering native biodiversity. Such disturbances reduce the abundance of some organisms, cause population growth in others, modify the interactions among organisms, and alter the interactions between organisms and their physical and chemical environments. Patterns of infectious diseases are sensitive to these disturbances. Major processes affecting infectious disease reservoirs and transmission include deforestation; land-use change; water management, for instance through dam construction, irrigation, uncontrolled urbanization or urban sprawl; resistance to pesticide chemicals used to control certain disease vectors; climate variability and change; migration and international travel and trade; and the accidental or intentional human introduction of pathogens.

Climate change, biodiversity and health

Biodiversity provides numerous ecosystem services that are crucial to human well-being at present and in the future. Climate is an integral part of ecosystem functioning and human health is affected directly and indirectly by results of climatic conditions upon terrestrial and marine ecosystems. Marine biodiversity is affected by ocean acidification related to levels of carbon in the atmosphere. Terrestrial biodiversity is influenced by climate variability, such as extreme weather events (e.g., drought, flooding) that directly influence ecosystem health and the productivity and availability of ecosystem goods and services for human use. Longer-term changes in climate affect the viability and health of ecosystems, influencing shifts in the distribution of plants, pathogens, animals, and even human settlements.
