Biodiversity and Human Health
Opportunities for cross-sectoral collaboration

Regional Capacity Building Workshop on Biodiversity and health for the
WHO European Region
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Secretariat of the Convention on Biological Diversity
& World Health Organization
Three primary objectives:

1. **Conservation** of biological diversity
2. **Sustainable use** of its components
3. **Fair and equitable sharing** of benefits arising from the sustainable use of genetic resources

**Biological Diversity (Art. 2)** “…includes all plants, animals, microorganisms, the ecosystems of which they are part, and the diversity within species, between species, and of ecosystems.” Decision V/4 para. 11
We all depend on biodiversity for human health, but some more than others

- Est. 33% globally live under moderate to severe water stress.
  - 20-120 million people live in areas affected by desertification
- More than 3 billion people depend on marine and coastal biodiversity for their livelihoods and subsistence
- 60 million indigenous peoples almost wholly dependent on forests
- An estimated 70% of world population relies on medicinal plants
- 350 million people depend on forests for subsistence and income

UN Water Report 2016, UNCCD, FAO, WHO, SDG 14
ENVIRONMENTAL IMPACTS ON HEALTH

WHAT IS THE BIG PICTURE?

FACT:
23%
of all global deaths are linked to the environment.
That's roughly **12.6 million deaths** a year.

WHERE IS IT HAPPENING?

- **3.8 million** in South-East Asia Region
- **3.5 million** in Western Pacific Region
- **2.2 million** in Africa Region
- **1.4 million** in European Region
- **854 000** in Eastern Mediterranean Region
- **847 000** in the Region of the Americas
By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a **healthy planet** and delivering **benefits** essential for **all people**.
5 strategic goals and 20 Targets

Aichi Target 14: ...Ecosystems that provide essential services... 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.
**Strategic Plan: Opportunities for the health sector**

<table>
<thead>
<tr>
<th>Biodiversity and Health Topic</th>
<th>Health Sector</th>
<th>Biodiversity Sector (Aichi Biodiversity Target)</th>
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<tr>
<td>1. Food</td>
<td><strong>Direct responsibility</strong>&lt;br&gt;• Recognize and promote dietary diversity, food cultures and their contribution to good nutrition&lt;br&gt;• Recognize synergies between human health and sustainable use of biodiversity (e.g. moderate consumption of meat)&lt;br&gt;<strong>Indirect responsibility:</strong>&lt;br&gt;• Promote sustainable production harvesting and conservation of agricultural biodiversity</td>
<td>T1; T14&lt;br&gt;T2 (poverty reduction)&lt;br&gt;T4 (sust. production/consumption)&lt;br&gt;T5 (reduce habitat loss)&lt;br&gt;T6 (sustainable harvesting)&lt;br&gt;T7 (sustainable management)&lt;br&gt;T13 (genetic diversity)</td>
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<td>2. Water</td>
<td><strong>Direct responsibility:</strong>&lt;br&gt;• Integrate ecosystem management considerations into health policy&lt;br&gt;<strong>Indirect responsibility:</strong>&lt;br&gt;• Promote protection of ecosystems that supply water and promote sustainable water use</td>
<td>T1; T14&lt;br&gt;T5 (reduce habitat loss)&lt;br&gt;T8 (reduce pollution)&lt;br&gt;T9 (invasive alien species)&lt;br&gt;T11 (protected areas)</td>
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<td>3. Disease regulation</td>
<td><strong>Direct responsibility:</strong>&lt;br&gt;• Integrate ecosystem management considerations into health policy&lt;br&gt;<strong>Indirect responsibility:</strong>&lt;br&gt;• Promote ecosystem integrity</td>
<td>T1; T14&lt;br&gt;T2 (poverty reduction)&lt;br&gt;T5 (reduce habitat loss)&lt;br&gt;T8 (reduce pollution)&lt;br&gt;T9 (invasive alien species)</td>
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<td>4. Medicine</td>
<td><strong>Direct responsibility:</strong>&lt;br&gt;• Recognize contribution of genetic resources and traditional knowledge to medicine&lt;br&gt;<strong>Indirect responsibility:</strong>&lt;br&gt;• Protect genetic resources and traditional knowledge&lt;br&gt;• Ensure benefit sharing</td>
<td>T1; T14&lt;br&gt;T2 (poverty reduction)&lt;br&gt;T5 (reduce habitat loss)&lt;br&gt;T13 (genetic diversity)&lt;br&gt;T16 (Nagoya Protocol)&lt;br&gt;T18 (local/traditional knowledge)</td>
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<td>5. Physical, mental and cultural well-being</td>
<td><strong>Direct responsibility:</strong>&lt;br&gt;• Integrate ‘value of nature’ into health policy&lt;br&gt;<strong>Indirect responsibility:</strong>&lt;br&gt;• Promote protection of values, species and ecosystems</td>
<td>T1; T14&lt;br&gt;T2 (poverty reduction)&lt;br&gt;T11 (protected areas)&lt;br&gt;T12 (preventing extinctions)&lt;br&gt;T13 (genetic diversity)&lt;br&gt;T18 (local/traditional knowledge)</td>
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<td>6. Adaptation to climate change</td>
<td><strong>Indirect responsibility:</strong>&lt;br&gt;• Promote ecosystem resilience and conservation of genetic resources</td>
<td>T1; T14; T15 (ecosystem resilience)&lt;br&gt;T3 (reduce negative subsidies)&lt;br&gt;T5 (reduce habitat loss)&lt;br&gt;T8 (reduce pollution)&lt;br&gt;T10 (vulnerable ecosystems)</td>
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*Note: T1, T2 & T14 are relevant to all themes identified.*
Imperative for Achieving the SDGs & Aichi Targets
CBD-WHO Joint Work Programme

Awareness Raising

Building Capacity

Building Partnerships
COP 11 (Decision XI/6)
Called for the establishment of a joint work programme with the WHO, and others, to support the contribution of the SP to achieving human health objectives;

COP 12 (XII/21): First full decision on biodiversity and Human health welcomes KM of the State of Knowledge Review, new emphasis on building capacity
Consider implications of the findings... (Dec. XII/21)
Contact with the natural environment and microbial diversity helps us control background inflammation.

Microbial exposure also linked with improved mental health.

Without diverse microbial contact we are vulnerable.

Rise in Chronic inflammatory disorders ➔

- Type 1 Diabetes
- Colitis
- Allergies
- Asthma & many more!
Rapid loss of genetic diversity

Agrobiodiversity underpins resilience yet...

**Shrinking diversity**

- Globally identified plant species: 250,000
- Number of crops used for food by humans throughout history: 7,000
  - Rice, maize and wheat currently provide >50% of the world’s calories from plants
  - 12 crops that together with 5 animal species provide 75% of the world’s energy intake
Dietary energy supply can be satisfied without diversity
Micronutrient supply cannot be satisfied without diversity
Opportunities for the health sector: Nutritional Security

- **Pollinators affect 1/3 food supply** and increase crop productivity
- Widespread loss of pollinators (up to 70%) due to pesticide use

- **Wildlife is essential to human nutrition.**
  - Vitamins A, B6, B12, D, E, Riboflavin, iron, zinc, magnesium, protein and fatty acids

- Food based approaches are critical to combatting malnutrition

- Sustainable consumption and production patterns can have dual benefit of reducing climate change impacts and promoting good health
Emerging Infectious Diseases and Biodiversity Loss

Drivers of recently-emerging infectious diseases in humans from wildlife

- Land use changes
- Food industry changes
- Human susceptibility to infection
- Agricultural industry changes
- International travel & commerce
- War & famine
- Unspecified
- Climate & weather
- Breakdown of public health measures
- Bushmeat
- Human demographics & behavior
- Medical industry changes
- Antimicrobial agent use
- Other industries

WHO-CBD State of knowledge review, 2015
Biodiversity: Urban and Mental Health

Role of biodiversity in urban life:
- Immunoregulation
- Physical and mental health
- Cultural/spiritual enrichment

Opportunities:
- Integrate ‘value of nature’ into policy including mental health and non-communicable diseases
- Increase opportunities for urban exposure to green spaces and microbial diversity as a preventive health strategy
- Promote protection of values, species and ecosystems
Invites Parties, other Governments to consider “...health-biodiversity linkages in developing and updating relevant national policies and programmes, strategies, plans, and accounts including health strategies, such as national environmental health action plans, national biodiversity strategies and action plans, and sustainable development and poverty eradication strategies; “
“We may be mortgaging the future of future generations to achieve the health of current populations…”

Source: Whitmee et al. 2015
Alignment of National Targets to Aichi Targets
Based on 122 NBSAPs since COP 10

- No national target
- The national target has little relevance to the Aichi Target
- The national target is significantly lower than the Aichi Target
- National target is less ambitious than the Aichi Target or does not address all of its elements
- National target is commensurate with to the Aichi Target
- National target surpasses the scope and/or level of ambition of the Aichi Target
Opportunity & imperative for leadership
Unique opportunities for leadership

Major motivator for policy change & opportunity to:

- Invest in EDUCATION and awareness-raising
- Adopt integrated, inclusive, cross-sectoral approaches
- Reduce inefficiencies of siloed approaches
- Assess and address the common drivers of biodiversity loss and ill health
- Link policies to conservation as a delivery mechanism for health
- More holistic assessments & evaluation of co-benefits and trade-offs
- Integrate health-biodiversity nexus in more coherent strategies, plans and actions (NBSAPs) & national health strategies
Integrated approaches to achieve Planetary Health

Prof. Andy Haines, Chair Rockefeller Foundation
Lancet Commission on Planetary Health