



World Health
Organization



Convention on
Biological Diversity



Biodiversity and Human Health ***Opportunities for cross-sectoral collaboration***

**Regional Capacity Building Workshop on Biodiversity and health for the
WHO European Region**

Helsinki, Finland

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& World Health Organization*



Convention on Biological Diversity

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

ENVIRONMENTAL IMPACTS ON HEALTH

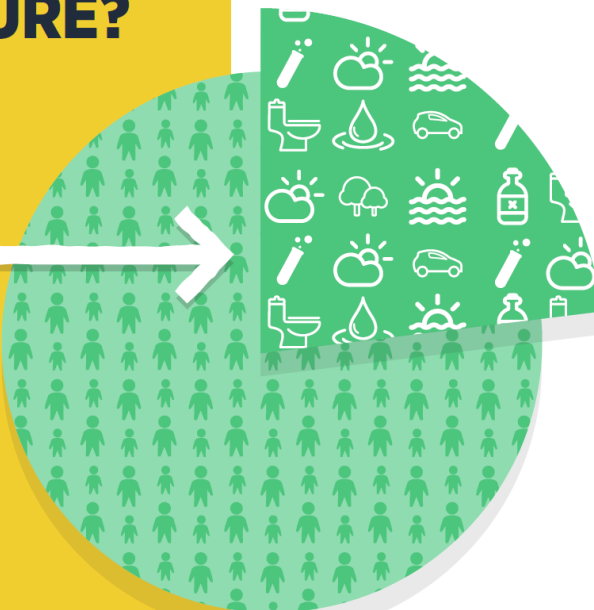
WHAT IS THE BIG PICTURE?

FACT:

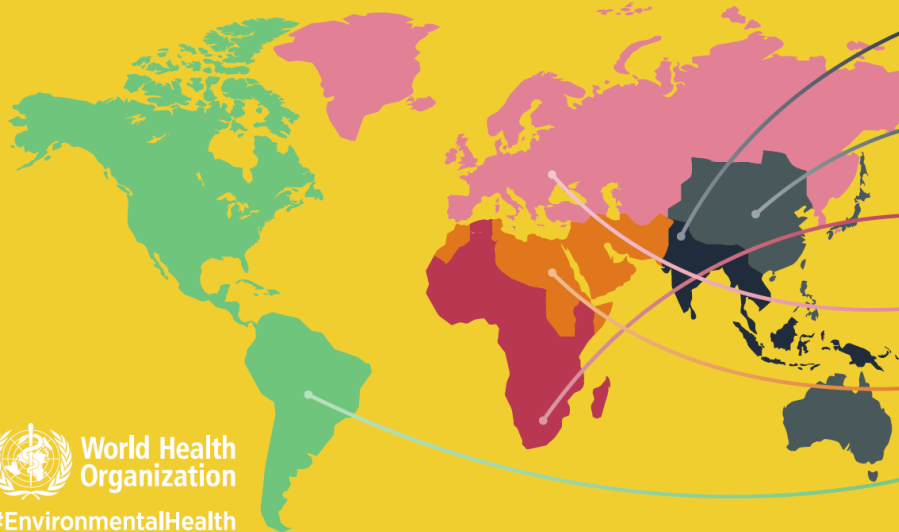
23%

of all global deaths are linked to the environment.

That's roughly **12.6 million deaths** a year.



WHERE IS IT HAPPENING?



PREVENTING DISEASE THROUGH HEALTHY ENVIRONMENTS

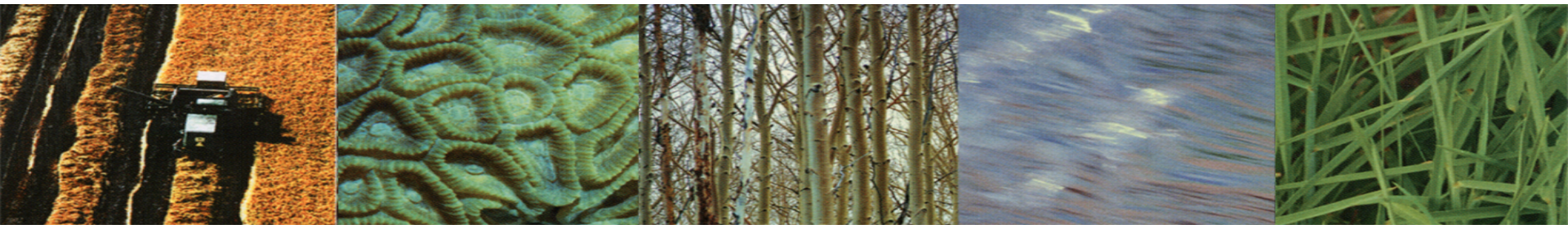
A global assessment of the burden of disease from environmental risks

A Prüss-Ustün, J. Wolf, C. Convalán, R. Bos and M. Neira

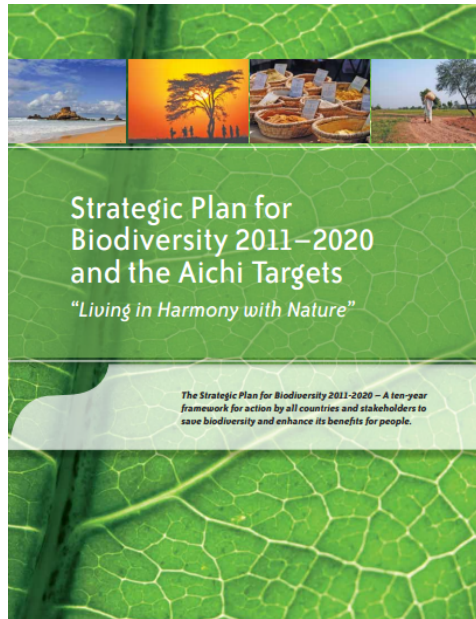


Strategic Plan for Biodiversity 2011-2020: Vision

By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a **healthy planet** and delivering **benefits** essential for **all people**.



Mandates: Strategic Plan for Biodiversity 2011-2020



www.cbd.int/sp

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

* Note: T1, T2 & T14 are relevant to all themes identified

| Biodiversity and Health Topic | Health Sector | Biodiversity Sector (Aichi Biodiversity Target) |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Food | <p><i>Direct responsibility</i></p> <ul style="list-style-type: none"> •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) <p><i>Indirect responsibility:</i></p> <ul style="list-style-type: none"> •Promote sustainable production harvesting and conservation of agricultural biodiversity | <p>T1; T14 T2 (poverty reduction) T4 (sust. production/consumption) T5 (reduce habitat loss) T6 (sustainable harvesting) T7 (sustainable management) T13 (genetic diversity)</p> |
| 2. Water | <p><i>Direct responsibility:</i></p> <ul style="list-style-type: none"> •Integrate ecosystem management considerations into health policy <p><i>Indirect responsibility:</i></p> <ul style="list-style-type: none"> •Promote protection of ecosystems that supply water and promote sustainable water use | <p>T1; T14 T5 (reduce habitat loss) T8 (reduce pollution) T9 (invasive alien species) T11 (protected areas)</p> |
| 3. Disease regulation | <p><i>Direct responsibility:</i></p> <ul style="list-style-type: none"> •Integrate ecosystem management considerations into health policy <p><i>Indirect responsibility:</i></p> <ul style="list-style-type: none"> •Promote ecosystem integrity | <p>T1; T14 T2 (poverty reduction) T5 (reduce habitat loss) T8 (reduce pollution) T9 (invasive alien species)</p> |
| 4. Medicine | <p><i>Direct responsibility:</i></p> <ul style="list-style-type: none"> •Recognize contribution of genetic resources and traditional knowledge to medicine <p><i>Indirect responsibility:</i></p> <ul style="list-style-type: none"> •Protect genetic resources and traditional knowledge •Ensure benefit sharing | <p>T1; T14 T2 (poverty reduction) T5 (reduce habitat loss) T13 (genetic diversity) T16 (Nagoya Protocol) T18 (local/traditional knowledge)</p> |
| 5. Physical, mental and cultural well-being | <p><i>Direct responsibility:</i></p> <ul style="list-style-type: none"> •Integrate 'value of nature' into health policy <p><i>Indirect responsibility:</i></p> <ul style="list-style-type: none"> •Promote protection of values, species and ecosystems | <p>T1; T14 T2 (poverty reduction) T11 (protected areas) T12 (preventing extinctions) T13 (genetic diversity) T18 (local/traditional knowledge)</p> |
| 6. Adaptation to climate change | <p><i>Indirect responsibility:</i></p> <ul style="list-style-type: none"> •Promote ecosystem resilience and conservation of genetic resources | <p>T1; T14; T15 (ecosystem resilience) T3 (reduce negative subsidies) T5 (reduce habitat loss) T8 (reduce pollution) T10 (vulnerable ecosystems)</p> |

Imperative for Achieving the SDGs & Aichi Targets



CBD-WHO Joint Work Programme

Awareness Raising

Building-Capacity

FREE EVENT
8 JULY 2014
12.00 to 16.00hrs
At 100

SUSTAINABLE FOOD SYSTEMS, BIODIVERSITY AND HEALTH

YOU ARE INVITED TO PARTICIPATE IN AN EXCITING DIALOGUE TO:

- Explore the evidence by reviewing, synthesizing and health of the protection of ecosystems and the food systems. Discuss national and community of origin. It presents sustainable food systems and healthy diets for people while protecting biodiversity.
- Live with the findings of the HLPE-2 (State of Knowledge Review, discuss strategies to foster progress, healthy and biodiversity policy options, including biodiversity and food and nutrition security. Discussions will aim to jointly support the implementation of the Paris Agreement, the SDG commitments and the SDGs.
- Explore possible pathways for collaboration and identify concrete actions and accountability mechanisms. Join the United Nations, Convention on Biological Diversity (CBD) and the Director of FAO, an initiative to bring governments, scientists, NGOs, and other stakeholders together to contribute to the transition towards sustainable and healthy food systems within the climate and the 2020 Development agenda.

Co-organized by:



2011-2020
United Nations Decade on Biodiversity
Living in harmony with nature



Health and Biodiversity

KEY MESSAGES

Biodiversity underpins our food systems, our medicines, and our health. It is essential to our well-being and the health of our planet. We must protect and restore biodiversity to ensure a healthy and sustainable future for all.

1. Biodiversity is essential for food security and nutrition. It provides the genetic diversity needed to develop resilient and nutritious crops and livestock. It also supports ecosystem services that are vital for agriculture, such as pollination and soil fertility.

2. Biodiversity is essential for human health. It is a source of medicines and provides ecosystem services that regulate climate, purify air and water, and control pests and diseases. It also plays a role in mental health and well-being.

3. Biodiversity is essential for a sustainable future. It is the foundation of our economies and societies. It provides the raw materials and services we need to live and work. It also helps us to adapt to and recover from natural disasters and other crises.

4. We must protect and restore biodiversity. This requires urgent action at all scales, from local to global. It requires the participation of all stakeholders, including governments, businesses, civil society, and individuals. It also requires a change in our values and behaviors, so that we see biodiversity as something to be valued and protected, rather than something to be exploited and degraded.

5. Biodiversity is a common concern. It is a global issue that affects us all. It requires a global response, based on science and equity. It also requires cooperation and collaboration between all countries, both developed and developing. It is a shared responsibility that we must all take.



By relying heavily on biodiversity, our food systems, our medicines, and our health are also contributing to economic development, and employment. It is also essential for biodiversity to be effectively conserved and managed. Biodiversity is essential for human health and well-being, through the ecosystem services it provides, such as clean air and water, and through the medicines and other health products that it provides. It is also essential for a sustainable future, as it provides the raw materials and services we need to live and work. It also helps us to adapt to and recover from natural disasters and other crises.

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Building Partnerships



Biodiversity and Health Mandates (cont.)

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

Evidence-based decision making

Connecting Global Priorities: Biodiversity and Human Health

A State of Knowledge Review



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Consider implications of the findings... (Dec. XII/21)

Concepts, themes & directions

Water and air quality

Agricultural biodiversity and nutrition

Infectious diseases

Microbial diversity and noncommunicable diseases

Biomedical discovery and impact of pharmaceuticals

Traditional medicine

Physical and mental health and cultural well-being

Climate change and disaster risk reduction

Population, consumption and production patterns

Strategies, tools and ways forward

Microbial Diversity & Noncommunicable diseases

- 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



Credit: Nature news, 2012

J. Phipps/Shutterstock

•Rise in Chronic inflammatory disorders

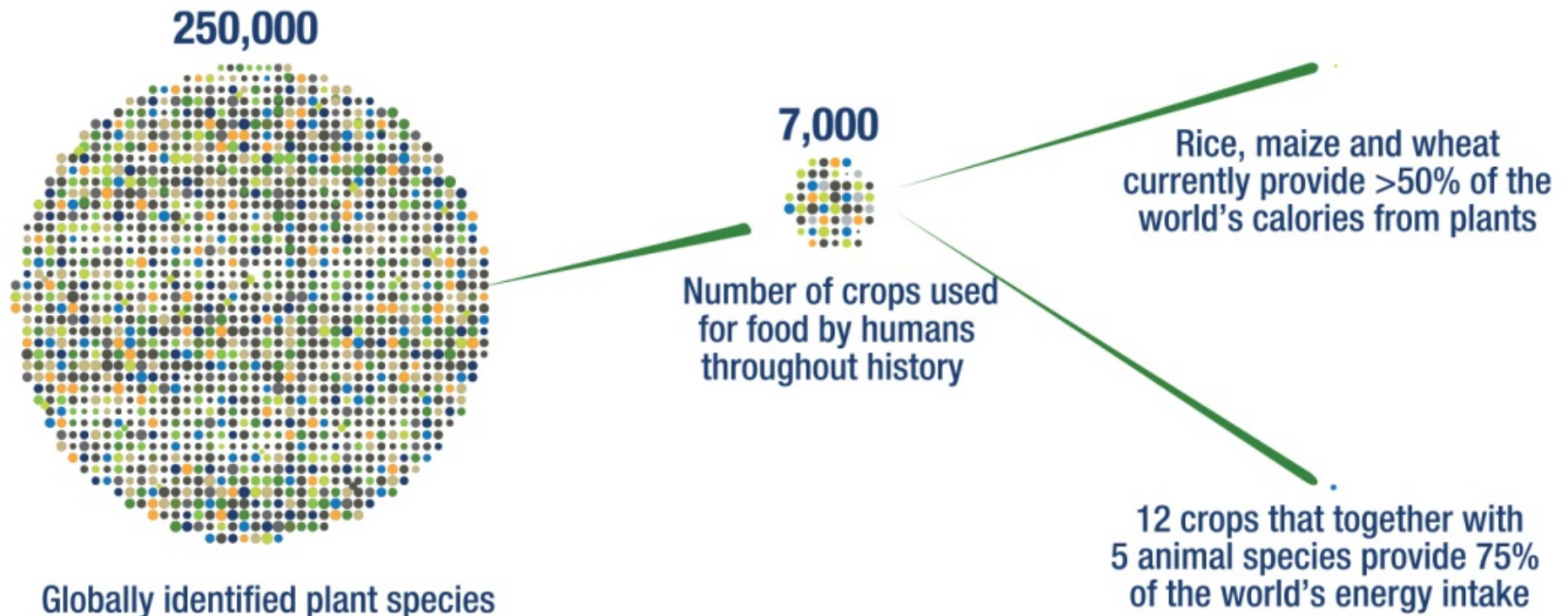


- Type 1 Diabetes
- Colitis
- Allergies
- Asthma & many more!

Rapid loss of genetic diversity

Agrobiodiversity underpins resilience yet...

Shrinking diversity



Food security & nutrition



1. Ng et al. 2014 2. FAO State of Food and agriculture, 2014 3. Global hunger index 2014

Dietary energy supply *can* be satisfied without diversity

Micronutrient supply *cannot* be satisfied without diversity

Opportunities for the health sector: Nutritional Security

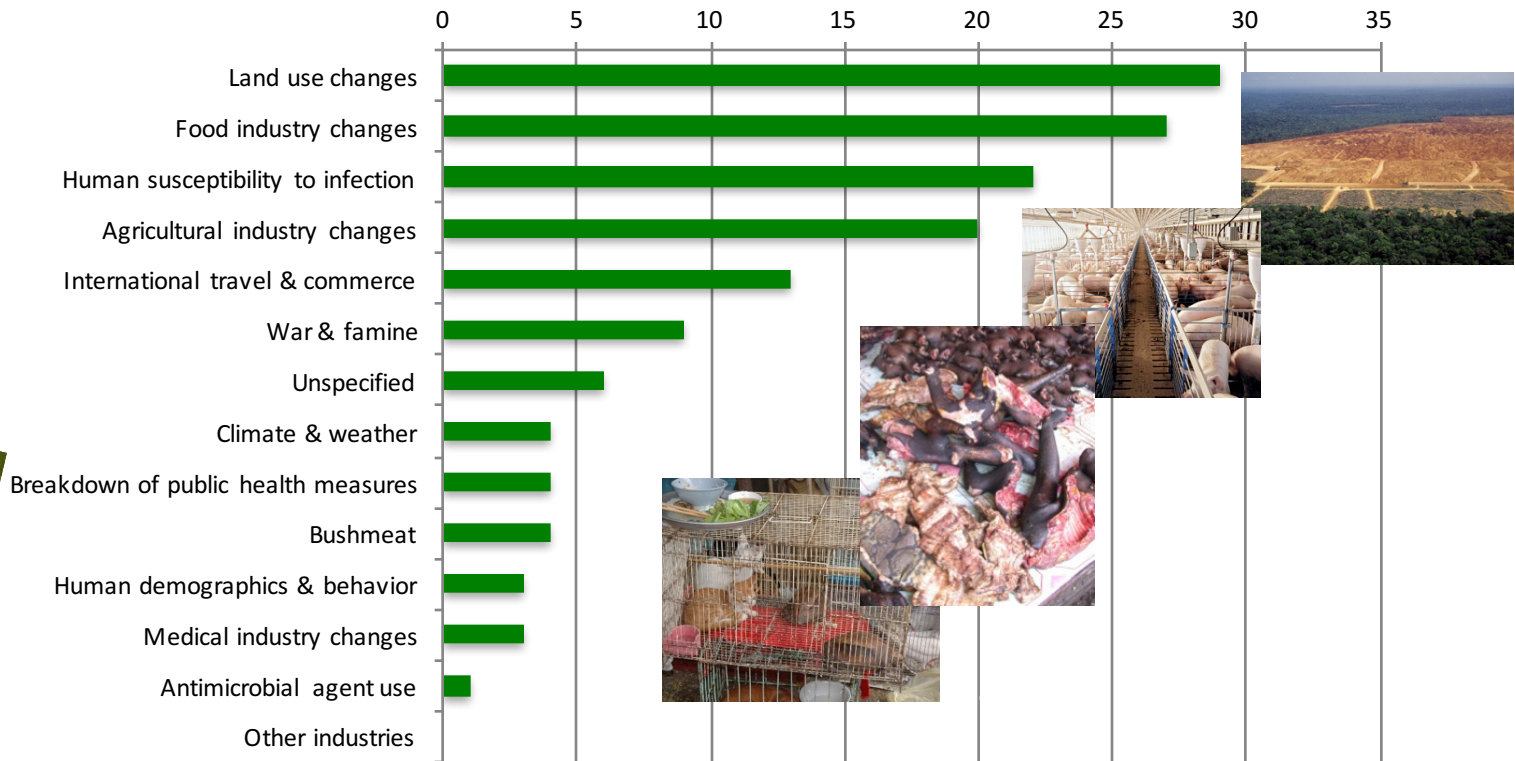
- **Pollinators affect 1/3 food supply** and increase crop productivity
- Widespread loss of pollinators (up to 70%!) due to pesticide use
- Wildlife is essential to human nutrition.
 - Vitamins A, B6, B12, D, E, Riboflavin, iron, zinc, magnesium, protein and fatty acids
- ❖ **Food based approaches are critical to combatting malnutrition**
- ❖ **Sustainable consumption and production patterns can have dual benefit of reducing climate change impacts and promoting good health**



Shared Drivers : Infectious Disease Emergence

Emerging Infectious Diseases and Biodiversity Loss

Drivers of recently-emerging infectious diseases in humans from wildlife



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



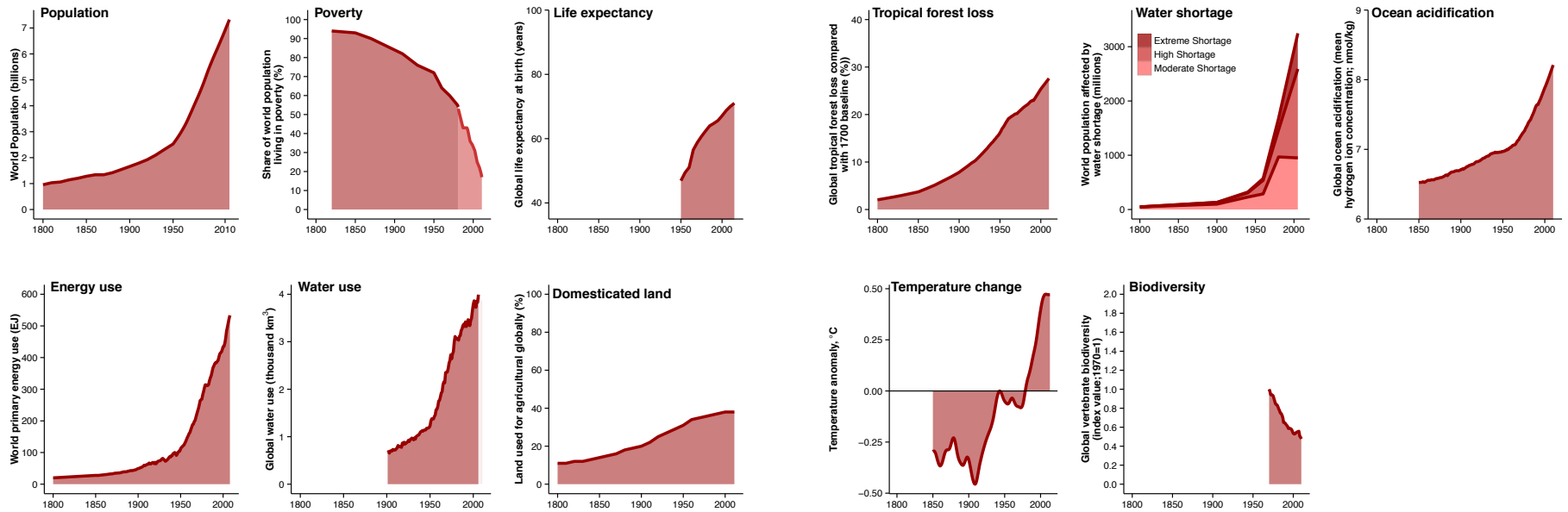
Biodiversity and Health Mandates (cont.)

COP 13 (Decision XIII/6) : Biodiversity and Human Health

Considers findings of the State of Knowledge review, emphasis on maximizing co-benefits, coherence and implementation

*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;** “*

Health and environmental trends in the anthropocene

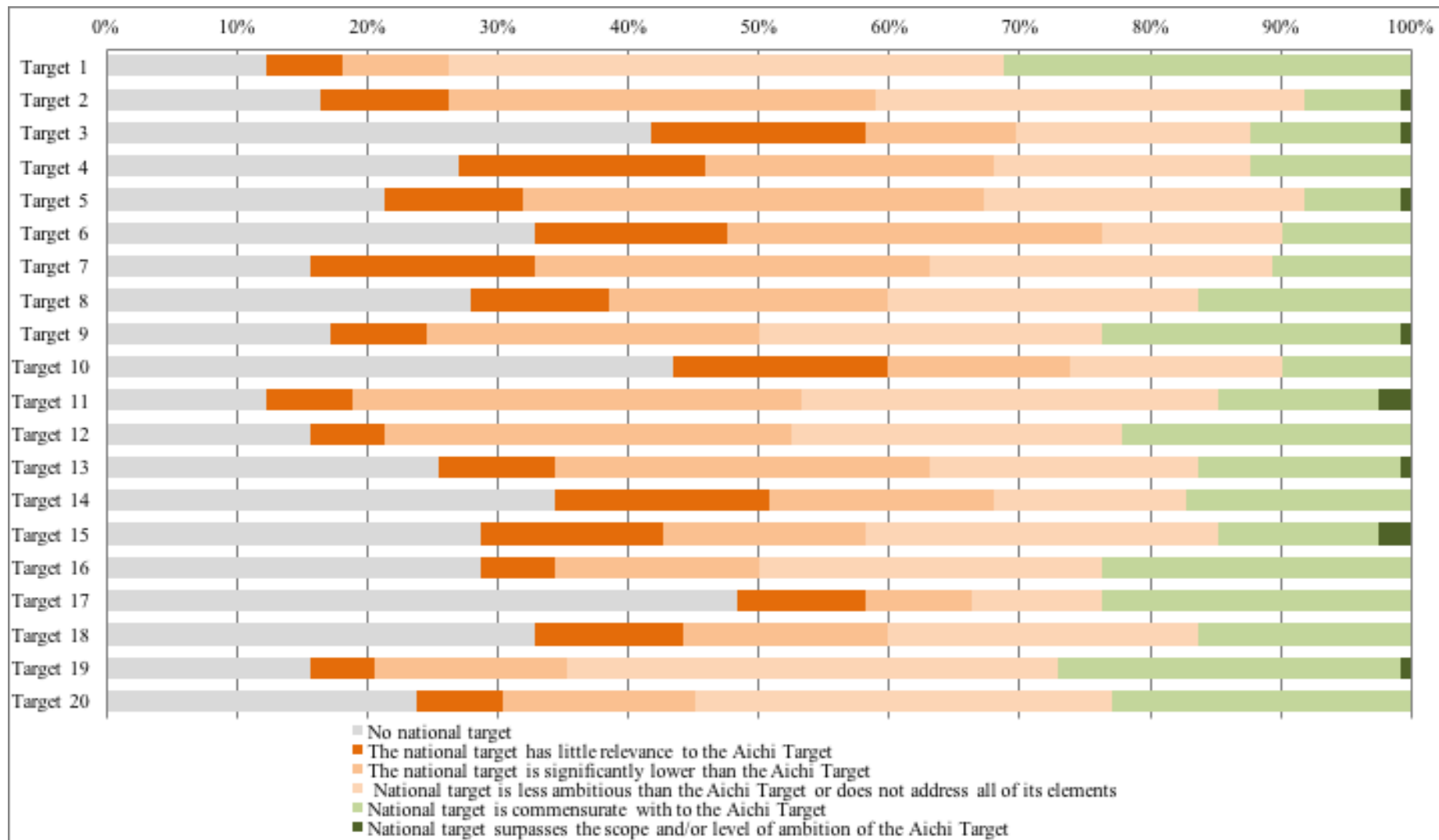


Source: Whitmee et al. 2015

“We may be mortgaging the future of future generations to achieve the health of current populations...”

Alignment of National Targets to Aichi Targets

Based on 122 NBSAPs since COP 10



Opportunity & imperative for leadership



Implementation

Science

Partnership Communication Resource Mobilization

Mainstreaming Capacity Building Monitoring



Policy

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



The
ROCKEFELLER
FOUNDATION

THE LANCET

Commission on Planetary Health

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