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Mainstreaming in the health sector

The fundamental human right to health is well established. Health is defined by the World Health Organization (WHO) as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Health status has important social, economic, behavioural and environmental determinants. Many aspects of human health are directly or indirectly dependent upon biodiversity, ecosystems and ecosystem functioning.

Human health and productive livelihoods depend upon ecosystem products and services, such as the availability of fresh water, food (including pollination), medicines and fuel sources. Many ecosystems, such as marine areas, forests, grasslands and wetlands, contribute to the regulation of the world's climate and influence local microclimates. Ecosystems play important roles in the water cycle, regulating the flow of water through the landscape, and the amount of sediments and contaminants that affect important water resources. They also provide less tangible benefits, such as cultural enrichment, and spaces for recreation and leisure. Changes in ecosystem services affect livelihoods, income and migration and can contribute to political conflict.

According to recent WHO estimates, approximately one quarter of all global deaths and 26% of deaths among children under five are due to modifiable environmental factors. With the possible exception of some non-communicable diseases, such as cardiovascular diseases, where the per capita disease burden is greater in the developed world, the environmentally mediated disease burden is much higher in lower-income countries, where people are most directly reliant on biodiversity, and often have the least access to social protection mechanisms.

In addition to environmental and social costs, ill health poses significant burdens to national and global economies. The global economic impact of five leading chronic diseases alone — cancer, diabetes, mental illness, heart disease, and respiratory disease — could reach $47 trillion over the next two decades, according to a recent study by the World Economic Forum. Antimicrobial resistance could cost in excess of $1 trillion annually after 2030. In addition, the costs associated with infectious diseases, responsible for over 1 billion human infections per year, compounds these pressures. Based on other recent World Bank estimates, the cost of moderately severe to severe pandemics is approximately US$ 570 billion, or 0.7% of global income. While outbreaks are inevitable, strengthening health systems, increasing policy coherence across sectors and placing greater emphasis on prevention can enable countries to better detect and respond to diseases and prevent an outbreak from becoming a pandemic.

The potential benefits of biodiversity conservation and sustainable use to human health are numerous. Crop and genetic diversity allows for dietary diversity and nutrition, exposure to microbial diversity in the natural environment can provide a host of benefits to the immune system and gut microbiota, and greater exposure to nature can stimulate childhood development, contribute to a wide range of physical and mental benefits, and safeguard cultural and spiritual heritage. While the role of intact ecosystems and the suitability of climatic conditions in regulating the transmission of infectious diseases is not fully understood, several recent studies reporting an increased risk of zoonotic and vector-borne disease transmission in disturbed and degraded habitats emphasize the role of biodiversity in mediating exposure to infectious diseases.

Health effects from changes to the environment exacerbated by human activity, including land degradation, water, air and soil pollution, over-exploitation of fisheries and other causes of biodiversity loss pose serious challenges to the global health gains of the past several decades and are likely to become increasingly dominant as climate change proceeds. These trends are driven by highly inequitable, inefficient, and unsustainable patterns of resource consumption and technological development, together with population growth.

Common drivers of biodiversity loss, ecosystem degradation and ill health

Many direct drivers of biodiversity loss, such as land-use change, pollution, over-exploitation, antimicrobial use, invasive species, urbanization, infrastructural development, and climate change affect human health both directly and through their impacts on biodiversity. Synergistic effects can amplify impacts on both health and biodiversity. For example, direct effects of climate change on health may include stroke and dehydration associated with heat waves (in particular in urban areas), negative health consequences associated with reduced air quality and the spread of allergens. However, effects are also mediated through the impacts on ecosystems and biodiversity. Such effects may include decreased availability of given animal and plant species for food or medicines and changes in the spread of climate-sensitive waterborne and water-related, food-borne and vector-borne diseases. At the same time, urban expansion and infrastructural development, increasing population pressures, agricultural intensification and climate change, all of which can be significant drivers of biodiversity loss and ill-health, are also adding to disaster risks for many communities.

Social change and development biases influence the drivers of biodiversity loss and ill-health. Macroeconomic policies and structures, and public policies that provide perverse incentives or fail to incorporate the value of biodiversity frequently compound the dual threats to biodiversity and public health. From an equity standpoint, the social and economic impacts of biodiversity loss and ill-health are likely to be most pronounced among the world's poorest, most vulnerable populations, which are often those most immediately reliant on natural resources for food, shelter, medicines, spiritual and cultural fulfilment, and livelihoods. These vulnerable groups are also least able to access substitutes when ecosystem services are degraded.

Integrated approaches to health, such as One Health, bridge human health, the health of other species and the health of ecosystems (whether defined as disease outcomes, and/or the functioning of an ecosystem/provisioning of its services) to address common challenges faced by the global health and environmental communities. Such approaches can offer significant opportunities to maximize co-benefits, better assess trade-offs, and promote a more complete understanding of mutual dependencies, risks and solutions. Under the right conditions, they provide key opportunities for greater policy coherence, cross-sectoral alignment and opportunities for mainstreaming. Moderated consumption of some foods, especially meat, can combine with more sustainable agricultural, fishery and forestry practices to encourage sustainable use of resources and curtail biodiversity loss while at the same time contributing to improved health.

Questions to guide the discussions

- What are some specific positive examples of biodiversity mainstreaming in the health sector?
- What are the main actions for an enabling environment to mainstream biodiversity in this sector?
- What are the biggest challenges and barriers to mainstreaming biodiversity into the health sector? What are the biggest opportunities we have now?
- What additional actions are needed to enable and support biodiversity mainstreaming in this sector? Budgetary measures, institutional frameworks and processes, legislation or policy action?
- Who are the main actors that have a key role to play in achieving biodiversity mainstreaming in this sector?