

One Health & One Welfare

New Paradigm for Human Behavior



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09 September 2020



Emerging Threats Program



EcoHealth Alliance and a 'One Health' approach



- EcoHealth Alliance leads cutting-edge research into the critical connections between human and wildlife health and delicate ecosystems.
- With this science we develop solutions that promote conservation and prevent pandemics.



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ONE WELFARE MISSION, VISION AND CORE VALUES

VISION

Our vision is for the One Welfare concept to be understood, implemented and adopted at global level.

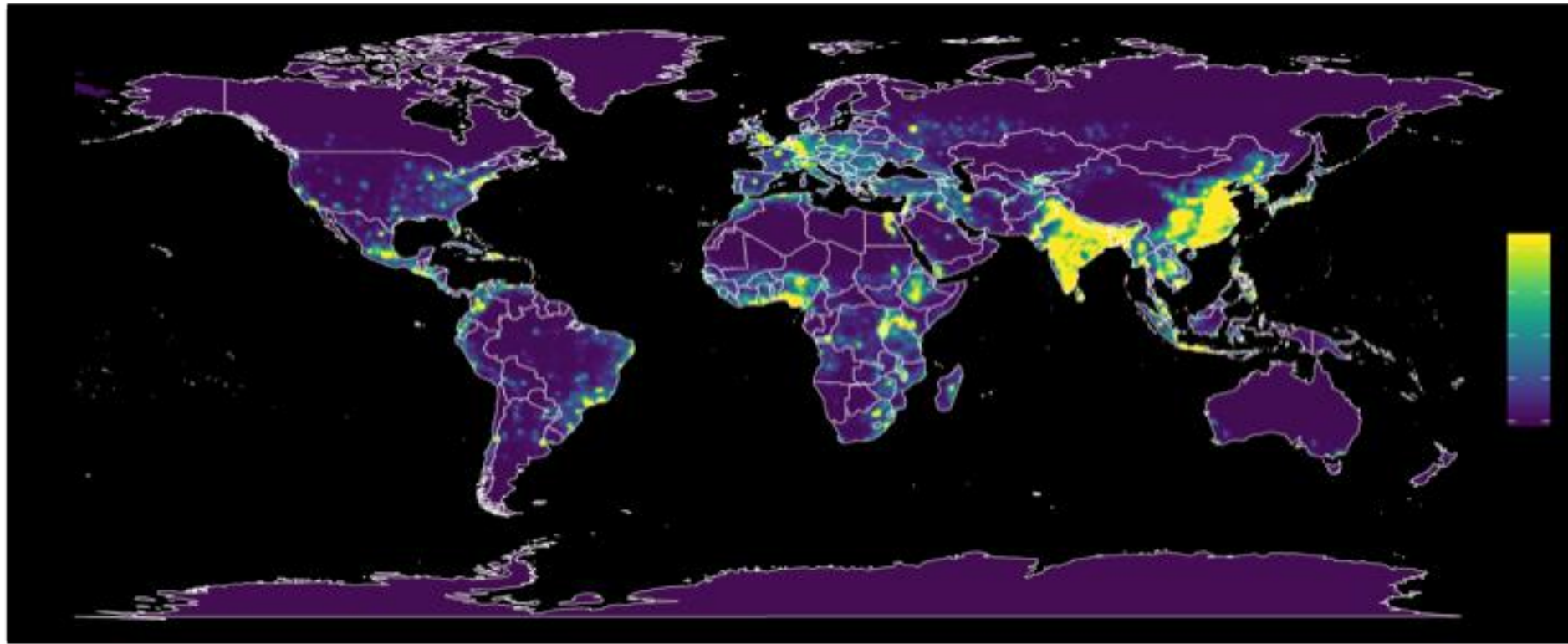
CORE VALUES

Passion
Compassion

MISSION

Our mission is to enable and inspire the wellbeing of animals, people and their physical and social environment.

Hotspots of Disease Emergence

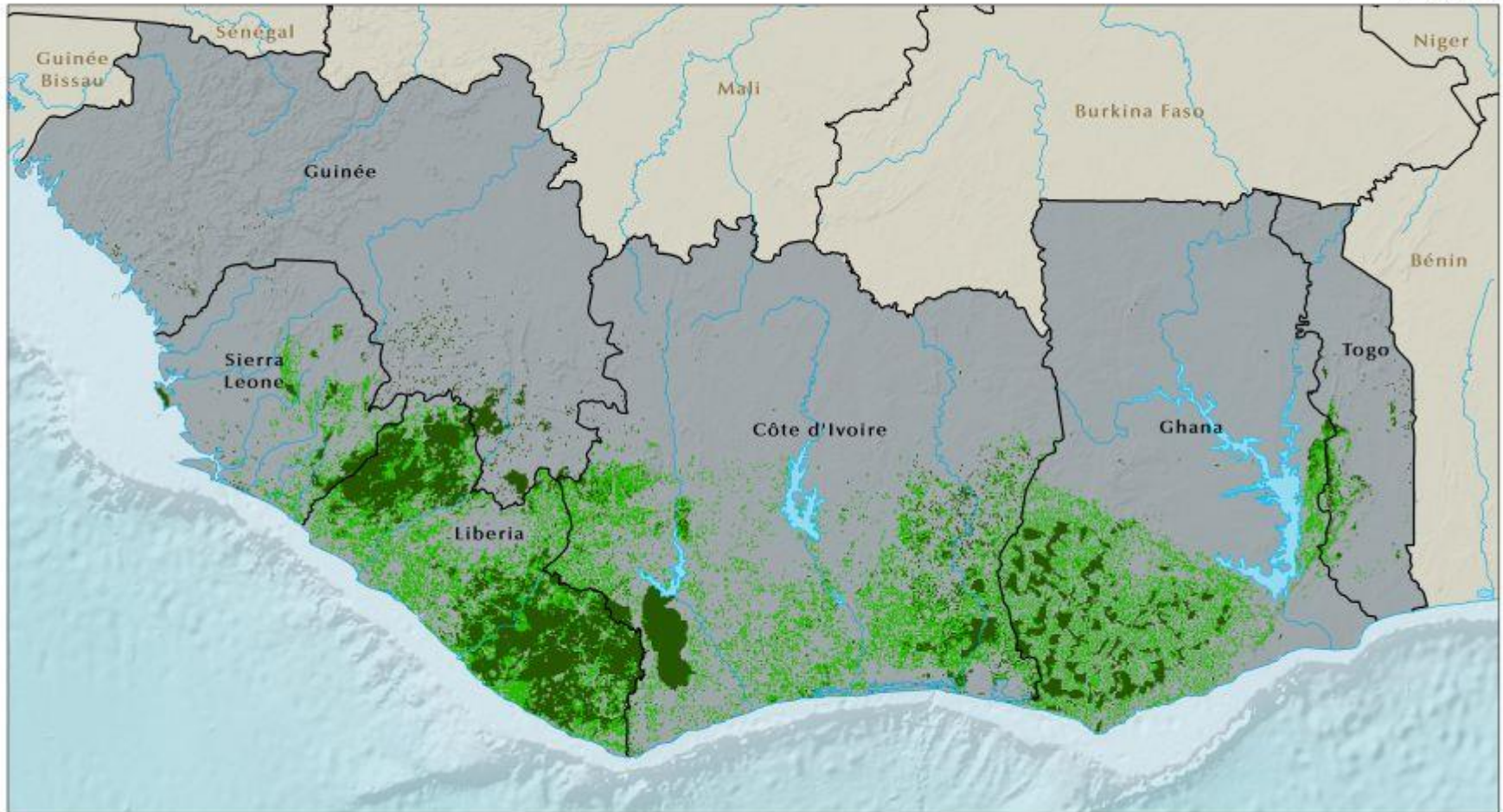


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Upper Guinean Tropical Forest

2013



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Biodiversity Hotspot

- Over 225 timber tree species
- 2000 flowering plant species
- 140 mammal species
- 600 bird species
- 75 amphibian and reptile species
- >1000 species of identified insects



“A countless number of animals, plants and other organisms of Liberia’s resource rich and diversified ecosystems which science has yet to discover.”

Must be conserved, utilized equitably and managed sustainably!

Source: National Biodiversity Strategy and Action Plan for 2017-2025



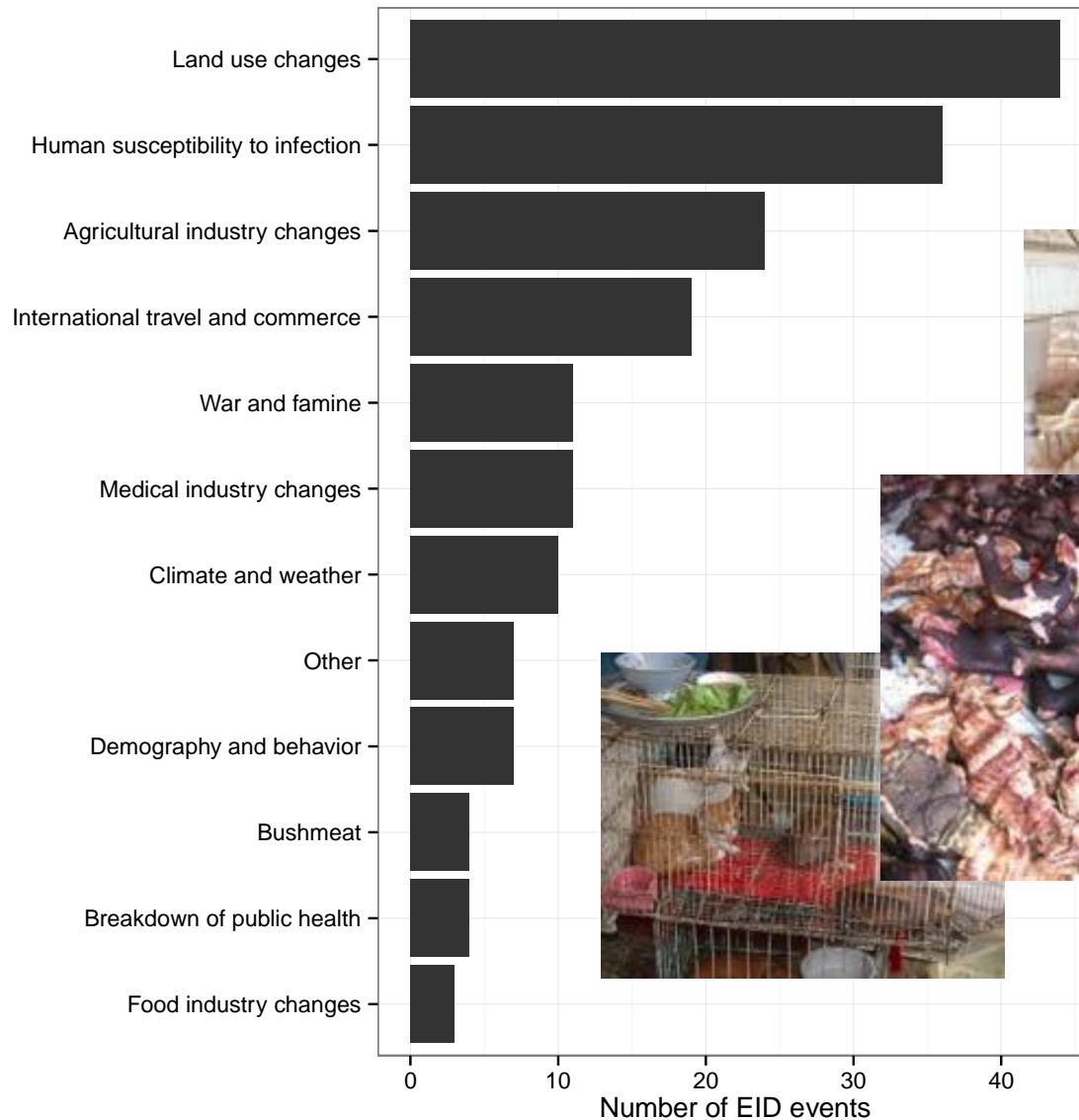
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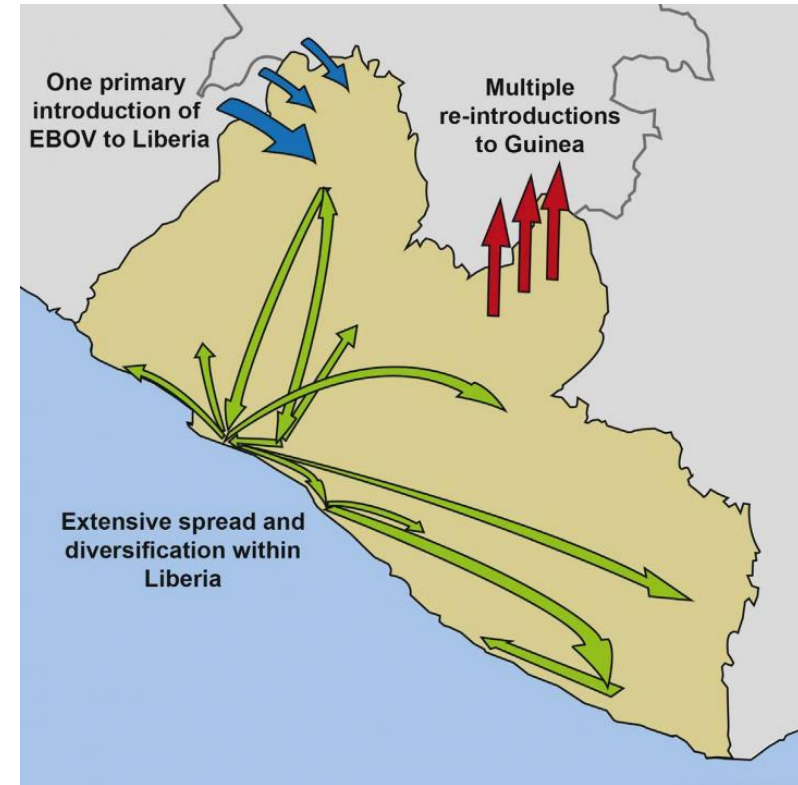
Shared drivers of biodiversity loss, ecosystem degradation and disease emergence

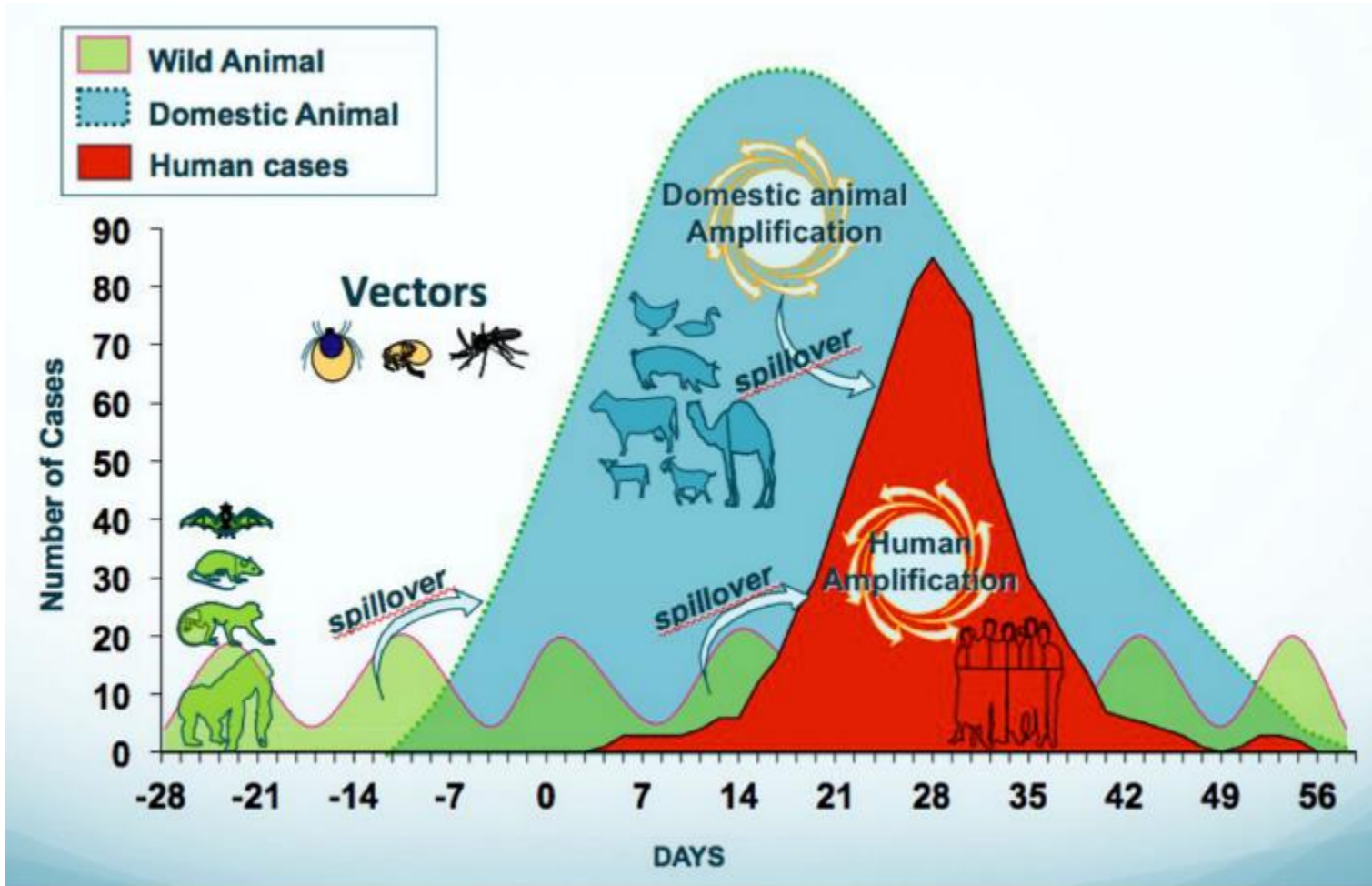


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Ebola Outbreak 2014-2015

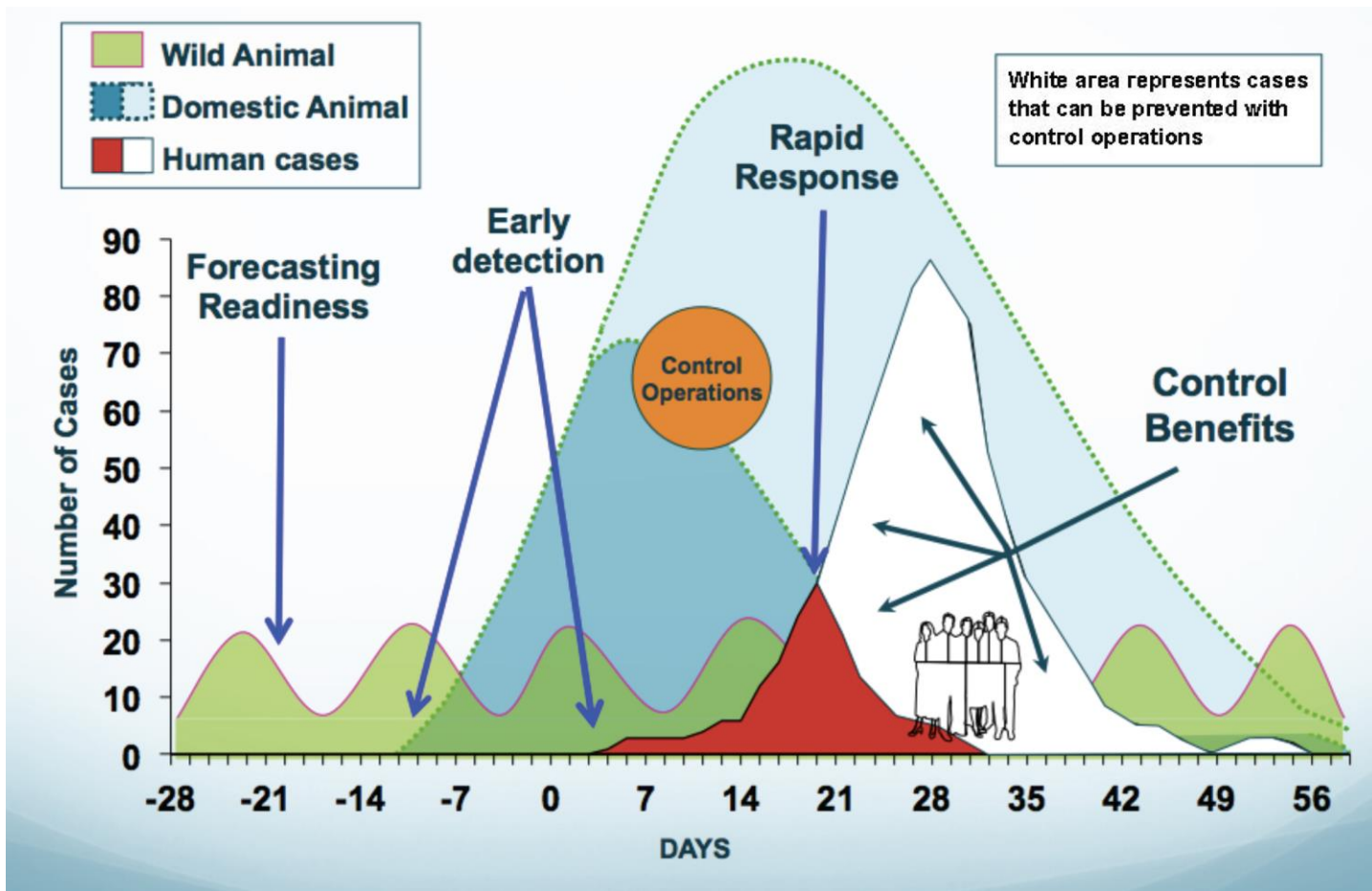
- Raised Awareness of link between wildlife and disease
- Prompted Major investment in Health Sector
- Established One Health Platform 2017
- Strong Collaboration across Sectors



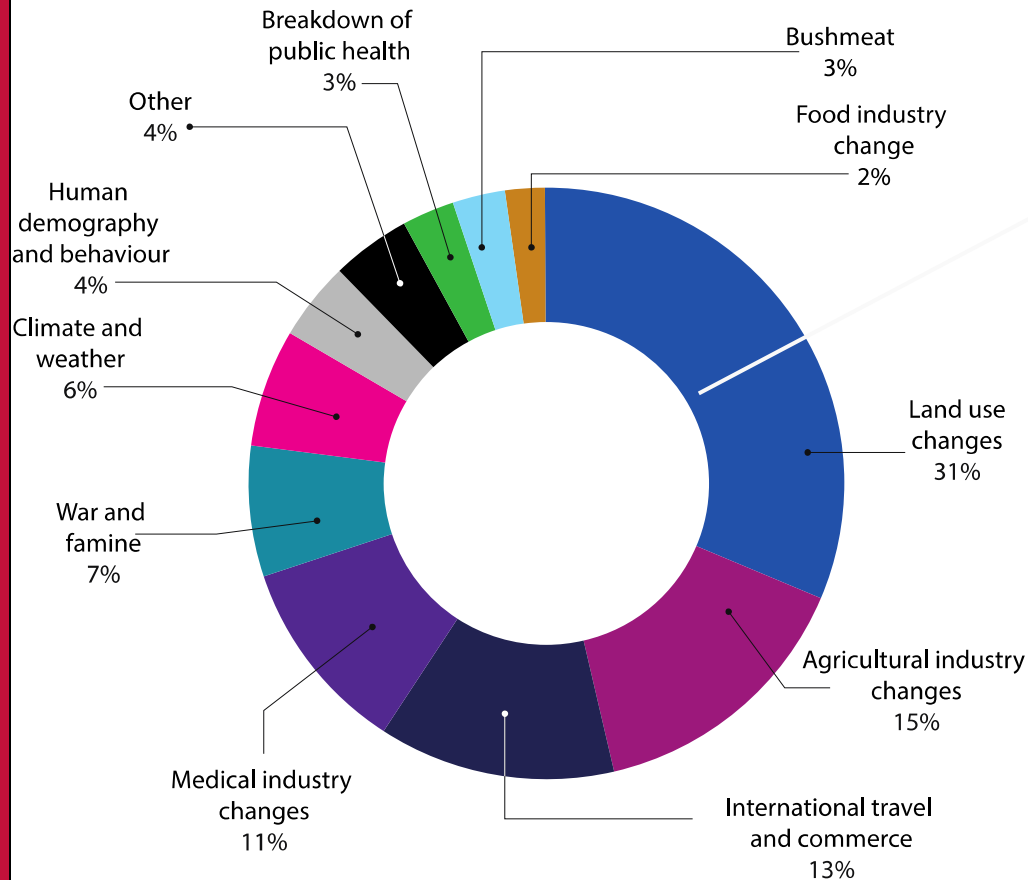


Source: Karesh et al. 2012. The Lancet & WHO





Land Use Change Drives Disease Emergence



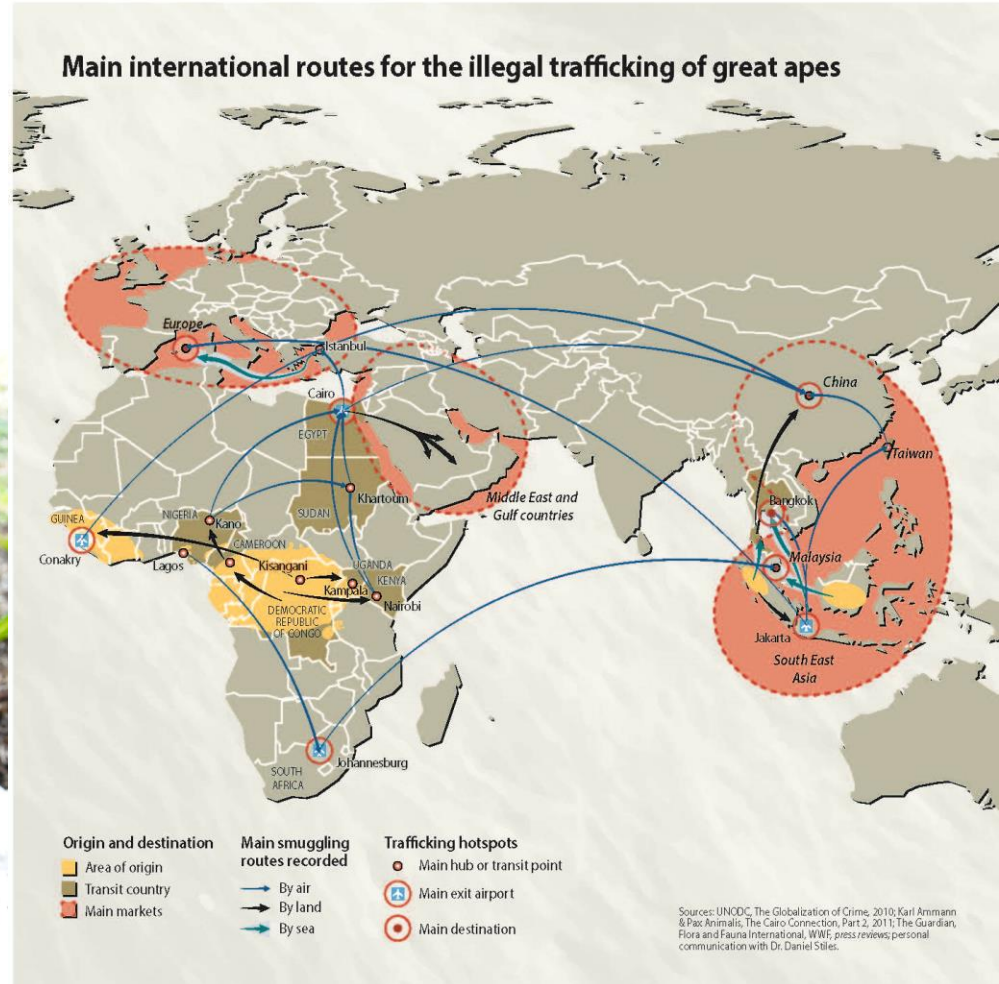
Land Use Change Drives Disease Emergence

Deforestation
Agricultural intensification
Habitat degradation
Habitat fragmentation

Land use change could lead to disease emergence by:

- 1) Increasing opportunities for wildlife-human-domestic animal contacts → pathogen spillover from wildlife (to humans or domestic animals) (**pathogen pool hypothesis**)
- 2) Altering host-pathogen ecological dynamics → cross-species transmission (**perturbation hypothesis**)

Live Great Ape Trade



Industrial Agriculture



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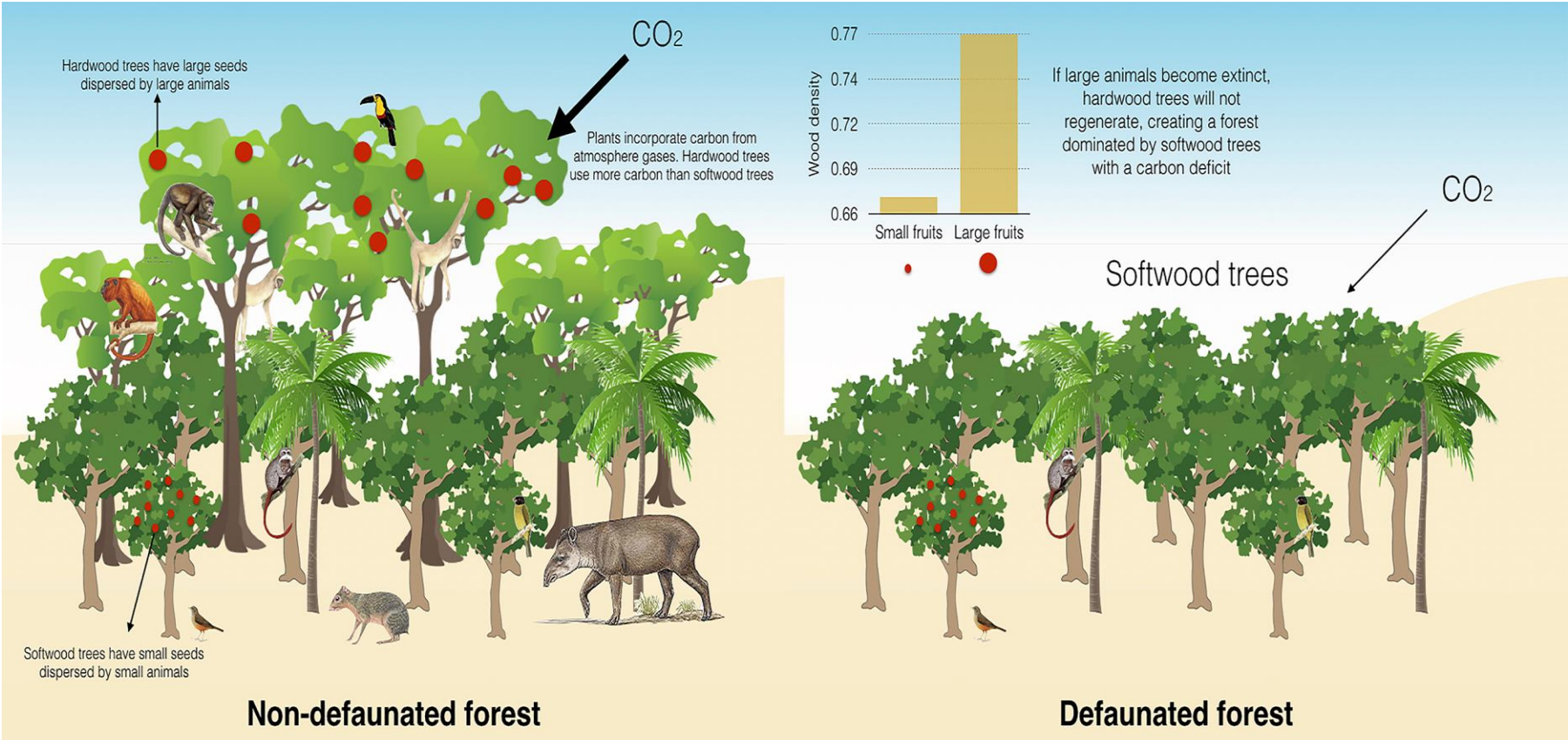
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Ecological Impact

Biodiversity loss → Ecosystem collapse → Human and Animal Health Impact



Ecosystem Services

Carbon Sequestration

Prevention of soil erosion

Micro-climate regulation

Timber harvesting

Water purification

Air quality regulation

Food

Disease regulation

Fertilizer

Maintenance of biodiversity Flood protection

Fresh water

Recreation

Pollination

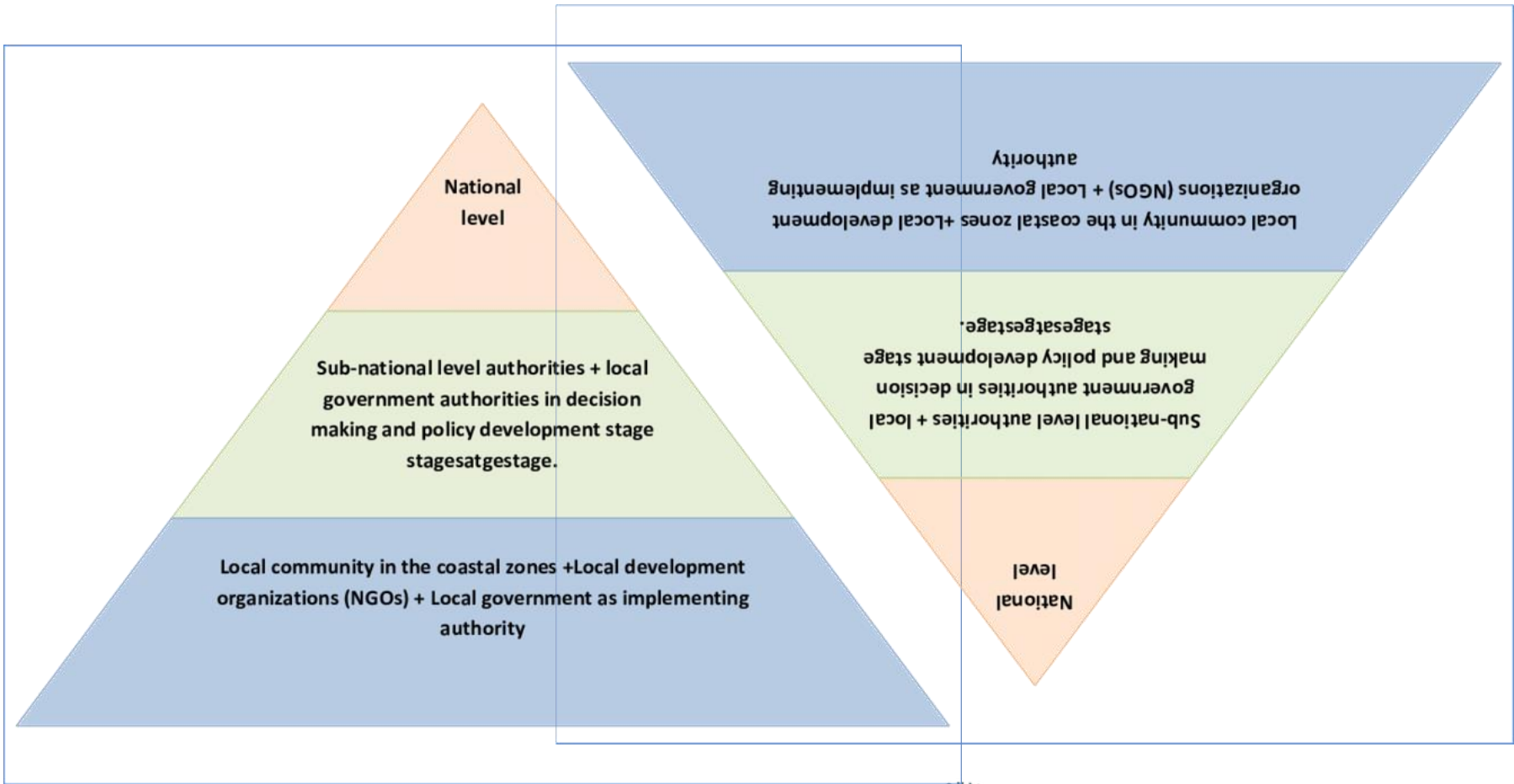
Seed dispersal

Tourism

Aesthetic Experience

Fish/game/fruit

Top Down and Bottom Up Approaches



Threats to Health from Environmental Degradation (and One Health opportunities)- examples

Mining: There are no post-environmental impact assessment on mined landscapes

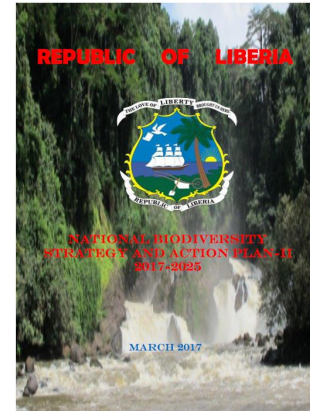
- Human health, social and environmental impacts/risks of industrial and artisanal mining remain largely unknown

Unsustainable and destructive extraction and collection of firewood and the production of charcoal:

- The production of charcoal and firewood is an important source of employment and supplemental income for many families, accounting for as much as 40% of their total income
- With continuous absence of electricity supply and lack of other alternative sources for household energy supply, the demand for wood fuel will continue to increase ...creating additional environmental degradation as forest cover reduces overall
- In addition to biodiversity loss, the production of charcoal and the use of firewood are serious threats to human health from smoke inhalation

More studies on inland wetlands and fresh water are urgent in Liberia, especially to determine the conservation values of the biodiversity they contain and water quality:

- Such information on freshwater is important for human health since freshwater is used for drinking in many rural communities
- Threats to Liberia's inland wetlands include but not limited to poisoning of water bodies to kill fish, gold and diamond mining (some gold miners reportedly use mercury which is poisonous to animals including man himself)



Source: National Biodiversity Strategy and Action Plan for 2017-2025

Mainstreaming Biodiversity for Health



Convention on
Biological Diversity

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



CONVENTION ON BIOLOGICAL DIVERSITY

CONFERENCE OF THE PARTIES TO THE
CONVENTION ON BIOLOGICAL DIVERSITY
Fourteenth meeting
Sharm el-Sheikh, Egypt, 17-29 November 2018
Agenda item 22

Health and Biodiversity

Draft decision submitted by the Chair of Working Group II

The Conference of the Parties,

Recalling decisions XIII/21 on health and biodiversity,

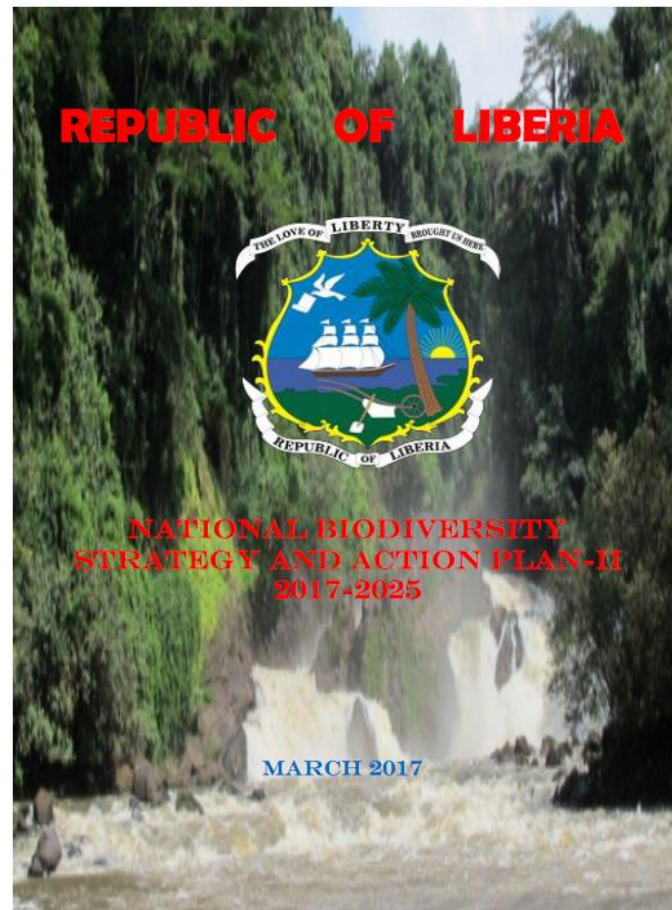
Recalling decisions XIII/3, in which it considered the mainstreaming of biodiversity in the sectors of agriculture, forestry, fisheries and tourism as well as cross-cutting issues, and in which it decided to address, at its fourteenth meeting, the mainstreaming of biodiversity into the sectors of energy and mining, infrastructure, manufacturing and processing, and health,

Recognizing that the health sector, on the one hand, depends on biodiversity and the ecosystem functions and services that biodiversity underpins, and that the loss of biodiversity can impact the health sector negatively, and that, on the other hand, the health sector has potential impacts on biodiversity which may threaten the provision of ecosystem functions and services that are vital to humanity,

Stressing that mainstreaming biodiversity in the health sector is essential for halting the loss of biodiversity and for the achievement of the Strategic Plan for Biodiversity 2011-2020 and the goals and objectives of different multilateral agreements and international processes, including the 2030 Agenda for Sustainable Development, and the Sustainable Development Goals,

CBD/COP/14/WG.2/CRP.4
19 November 2018

ORIGINAL: ENGLISH



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Biodiversity-Health Links to Global Goals

- Aichi Biodiversity Targets, particularly:
 - Target 14. Biodiversity and Ecosystem Services
- Sustainable Development Goals, e.g.:
 - 3. Health;
 - 6. Clean Water and Sanitation;
 - 13. Climate Action;
 - 14. Aquatic Ecosystems;
 - 15. Terrestrial Ecosystems;
 - 17. Partnerships
- Global Health Security Agenda (Prevent, Detect, Respond)
- Sendai Framework for Disaster Risk Reduction 2015-2030
 - Bangkok Principles for the implementation of the health aspects



	Reduce	Increase
7 GLOBAL TARGETS	Mortality/ global population 2020-2030 Average vs. 2005-2015 Average	Countries with national & local DRR strategies 2020 Value vs. 2015 Value
	Affected people/ global population 2020-2030 Average vs. 2005-2015 Average	International cooperation to developing countries 2030 Value vs. 2015 Value
	Economic loss/ global GDP 2030 Ratio vs. 2015 Ratio	Availability and access to multi-hazard early warning systems & disaster risk information and assessments 2030 Values vs. 2015 Values
	Damage to critical infrastructure & disruption of basic services 2030 Values vs. 2015 Values	