Biodiversity and Public Health: Needs for more knowledge and Challenges

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Biodiversity and Public Health Interdependency

The 3 levels for Health are

- Individual
- Communities
- Worldwide

Complex Systems and Interactions

Benefits

Challenges

Impacts

FOOD

AIR

DISEASES

WATER
Distribution of Infectious Diseases is Global, but transmission patterns are linked to local biodiversity

World Malaria Report, 2020. WHO

CDC map of Anopheles species, vectors of malaria
Protection effect of Biodiversity through Biting diversion

Green = 24% of bites on humans, high biodiversity
Orange = 60% of bites on humans, rural area
Blue = 80% of bites on humans, rural and urban area
Red = 90% of bites on humans, urban area and high anthropophily
Need of Biodiversity data for Improvement of Preparedness against Epidemics

West Nile virus Scenarios from Tran et al. 2017
Biodiversity and Public Health through the One Health Approach

Companion document to the World Health Organization (WHO) road map entitled Ending the neglect to attain the Sustainable Development Goals: a road map for neglected tropical diseases 2021−2030 ("the road map")
Biodiversity for Public Health through the Multisectoral Approach

EBOLA VIRUS DISEASE AND FOREST FRAGMENTATION IN AFRICA

A report by the Environmental Foundation for Africa and the ERM Foundation

Multisectoral Approach to the Prevention and Control of Vector-Borne Diseases

A conceptual framework
Challenges for the understanding of the link between Biodiversity and Public Health

By Mohr, 2016
Challenges for the prevention and control of Diseases

Moving the recommendations from the global level to the local level

Global → Regional → National → local

Preventing, Anticipating and Mitigating the ecological changes

Defining priorities for concomitant epidemics (Coker et al., 2011)
Some Key Considerations

The interdependency between situations and transmission patterns is now an evidence not only at the geographical levels but also between the different layers of our environment, calling for the need of more knowledge and data availability including biodiversity and ecological systems data.

Although the challenges for emerging and re-emerging infectious diseases are global, the solutions are contextual and require the understanding of the local conditions from physical to biological and social, with involvement of partners at different levels from local to global.

Because of the magnitude of the changes (demographics, climate, urbanization and others), each community/country cannot work in isolation and the need of exchange, collaboration and coordination has never been so huge, extending to different disciplines and sectors.

In this dynamic and continuously changing environment the Public Health is always more strongly linked to the other inhabitants of our planet forming the Biodiversity that we must better understand and protect as an essential component of the humanity health and survival.
THANK YOU VERY MUCH
For you attention