



Royal Veterinary College
University of London

LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



Emerging diseases and the environment – can't see the wood for the trees?

European OneHealth - EcoHealth Workshop in Brussels 6 & 7 October 2016.

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Ecohealth - One Health



Academic community
connecting and
debating on Ecohealth
issues

Emerging disciplines, which promote, study & act on the **links between animal, human, and ecosystem health**

The need evolved from the recognition of a **crisis**: increasing levels of disease driven by human-induced environmental degradation, human behaviour and wide ranging ecological changes



Academic community
connecting and
debating on OH issues

Transdisciplinary, bringing together veterinarians, epidemiologists, public health & social scientists, economists resource managers & more...

One Health

An approach to Improving health and well-being through the **prevention** of risks and the **mitigation** of effects of crises (e.g. emerging diseases) that originate at the interface between humans, animals and their various environments.

B. Promoting multi (cross) sectoral collaborations and a “whole of society” treatment of health hazards, as a systemic change of perspective in the management of risk.

One Health

Narrow vision

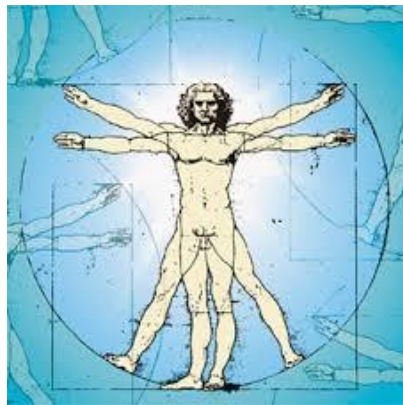
Diminish the threat & minimize the global impact of epidemics & pandemics due to highly infectious & pathogenic diseases of humans, animals

Broad vision

- Public & animal Health & food safety
- Food security & improved nutrition
- Livelihoods of poor and vulnerable people (including gender issues)
- Balanced investment between human, animal & environmental health effort including plants – healthy planet healthy people

Convergence

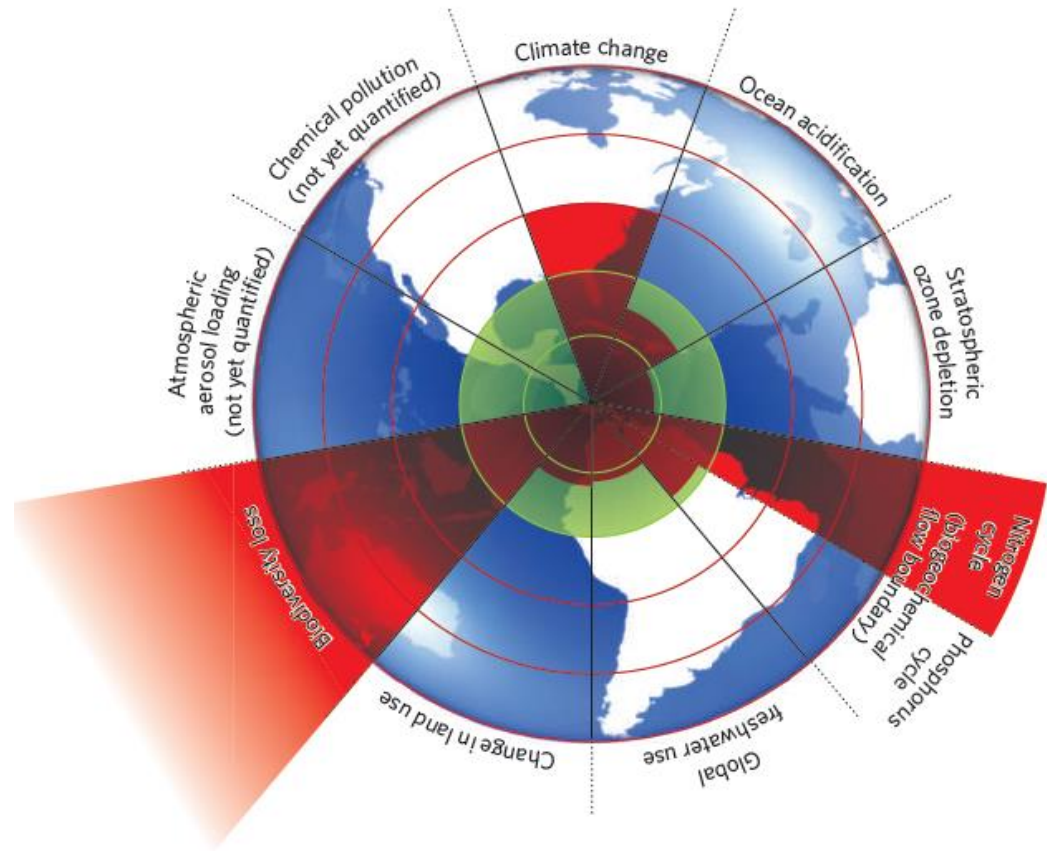
Global health is "the area of study, research and practice that places a priority on improving **health** and achieving equity in **health** for all **people** worldwide



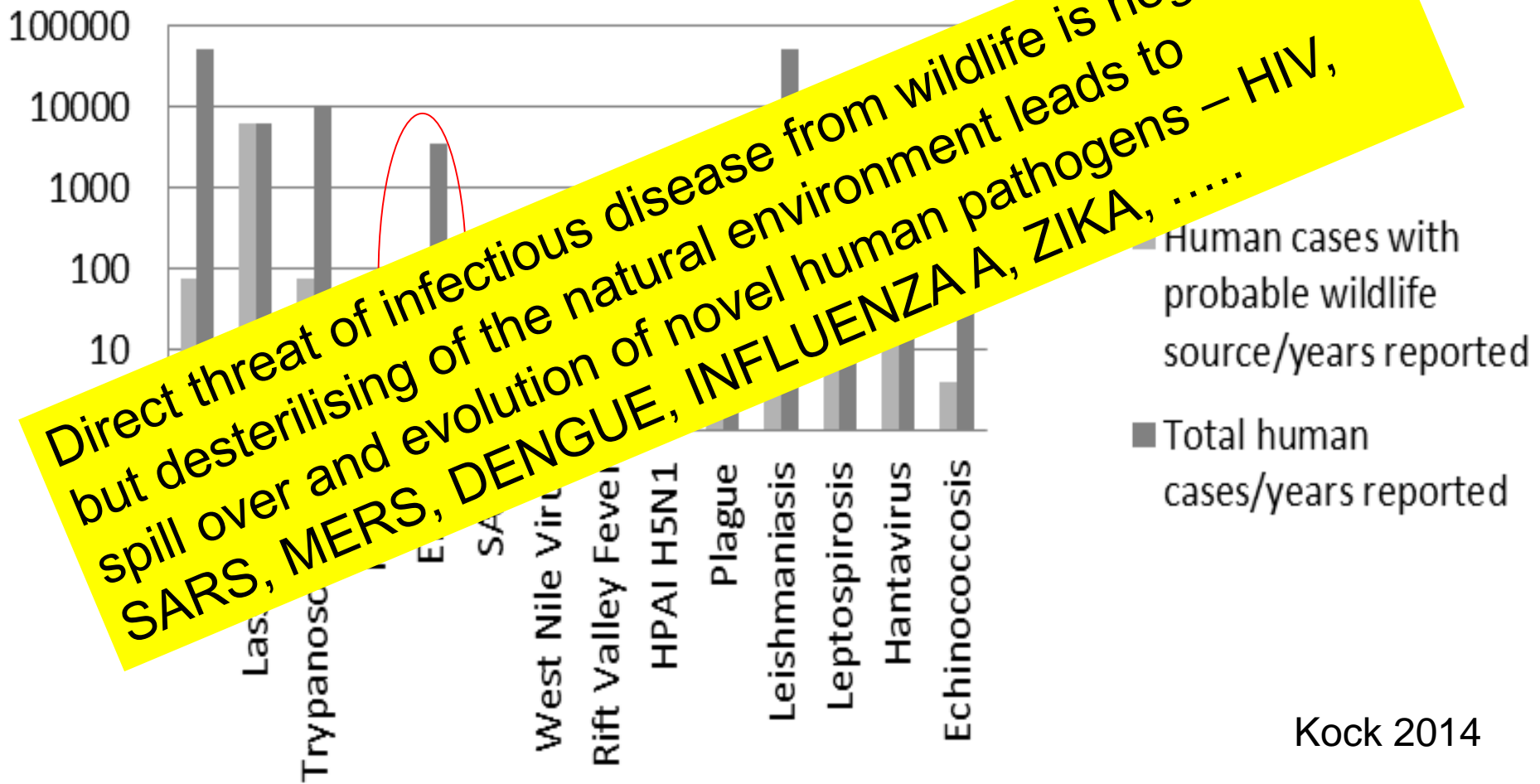
RVC

Global Health - Planetary Health

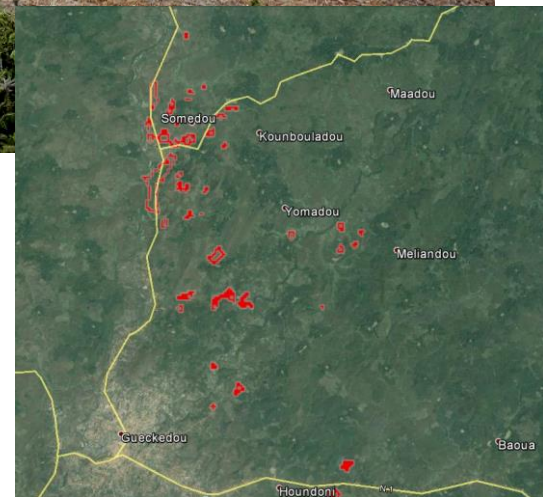
?????



Estimated Global Mortality Burden Selected Wildlife Zoonoses (Log scale)



Cannot ignore the role of land, landscape change & human impacts on ecosystems with respect to disease emergence



African palm (*Elaeis guineensis*)

Missing Link in One Health – Environment

50%

GLOBAL ENVIRONMENT OUTLOOK

Efficient wetlands, 2006

change



World Disasters Report 2014 – Most Deaths Caused by Floods \$16 billion

Daily news
10 October
European

re
dation

EU –
45% ag
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I
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Climate Change – Bacterial Proliferation Rates



Climate Change – Vector Borne Disease

Lyme borreliosis now 96,000 cases annually in European region

Crimean Congo
Haemorrhagic Fever

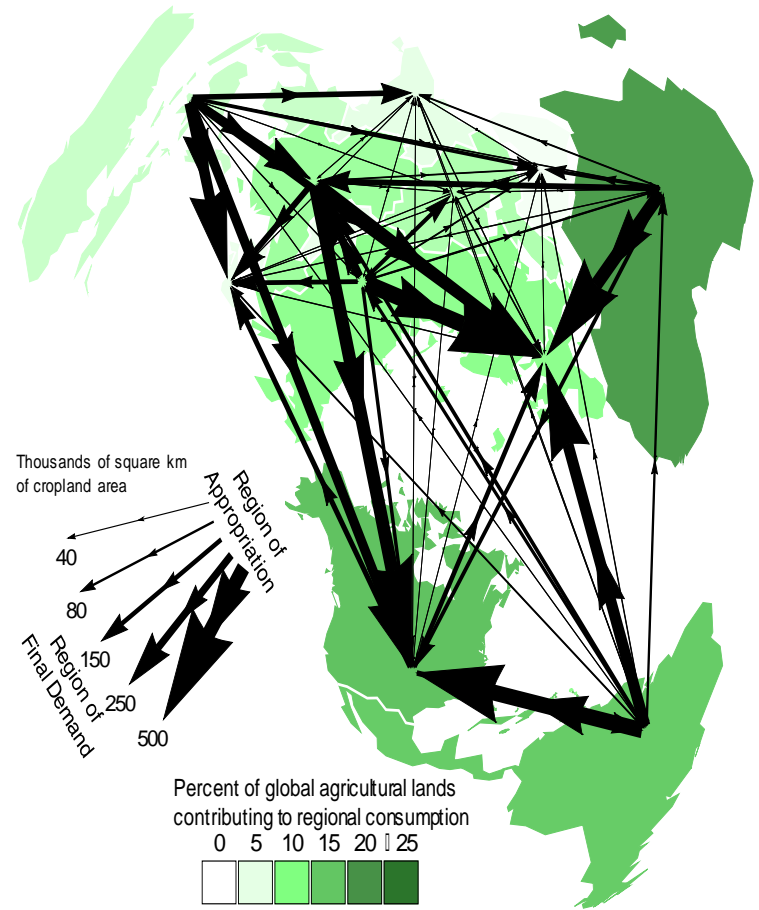
West Nile Virus

Bluetongue Virus

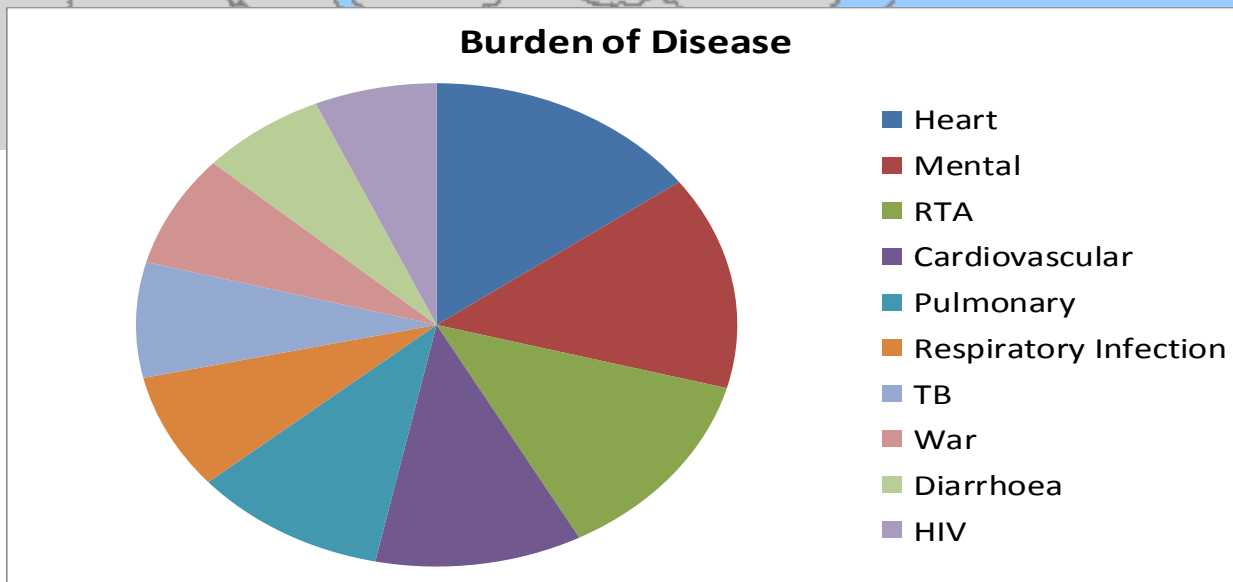
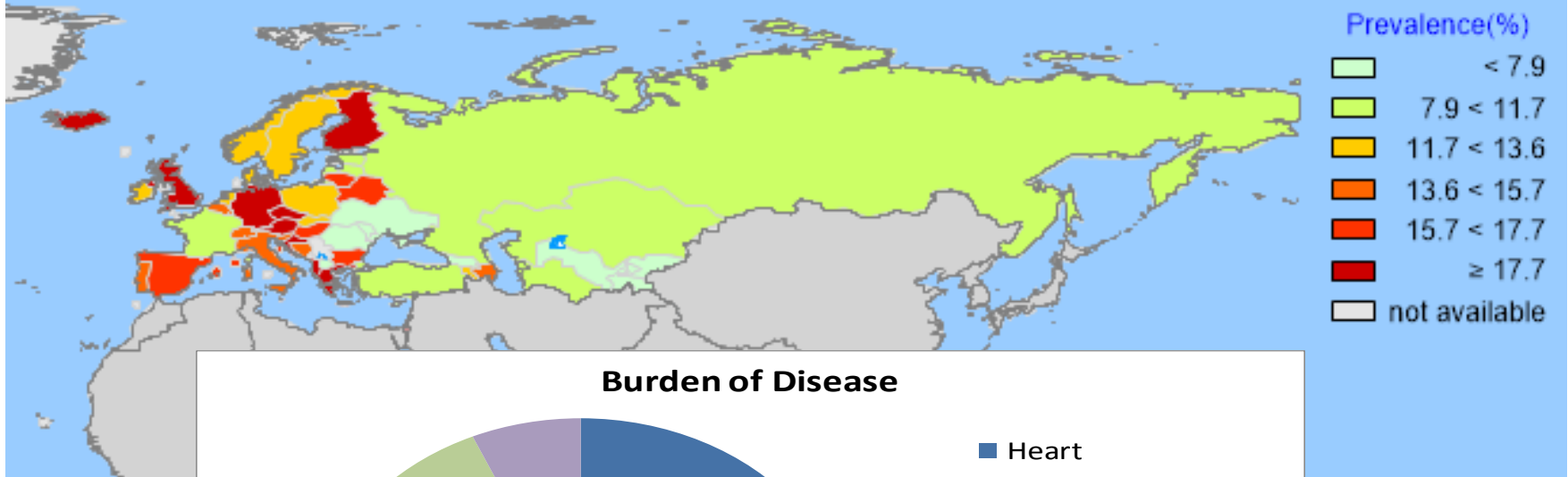


Food Systems - security

~50% of food imported into Europe with 4 x land acreage required in other countries per head of population to feed Europeans



Food Systems - nutrition



Food Systems – land degradation

Where we have the most productive soils we have the most people and soil capping

Result:

Food miles waste degradation

Poor quality nutrition

Processing

Chemicalisation – **TOXIC DIETS**

How to implement One Health in practice?

Research applied - proof of concept

Teaching One Health principles

Intervention programmes in health that include genuine transdisciplinary teams

Conferences & publications giving a balanced view of One Health (social = empirical sciences, environment=human=animal health)



Health practice more inclusive, more holistic in outcomes

ONE HEALTH AT THE ROYAL VETERINARY COLLEGE (RVC), UNIVERSITY OF LONDON

ONE HEALTH
One Health is a comprehensive approach to health that recognizes the connections between people, animals, plants, and the environment. It is a holistic approach that aims to improve the health and well-being of all living organisms and the planet.

IMPLEMENTATION
The Royal Veterinary College (RVC) is a leading institution in the field of One Health. It has established the One Health Centre, which brings together experts from different disciplines to work on common goals. The RVC has also implemented a One Health curriculum, which ensures that all students receive a comprehensive education in this field.

TRANSDISCIPLINARY TEAMS
One of the key features of the RVC's One Health approach is the use of transdisciplinary teams. These teams consist of experts from different disciplines who work together to address complex health issues. This approach allows for a more holistic and integrated view of health, leading to more effective solutions.

THE FUTURE OF ONE HEALTH
As the world's population continues to grow and the environment becomes increasingly stressed, the need for One Health becomes ever more urgent. The RVC is committed to leading the way in this field, and to ensuring that the next generation of veterinarians is well-equipped to meet the challenges of the future.

Dr. Sarah E. Cook, Director of the One Health Centre, RVC

Monitoring...assessments...

Where should One Health indicators be...

Perhaps....

1. Soil fertility
2. Air and water quality
3. Biodiversity
4. Microbiome and microbial perturbation in host communities associated with environmental change.
5. GBD – zoonoses or environmentally derived emergent disease, AMR related deaths and NCDs.

NEOH will answer some of these issues we hope....

Sustainable Development Goals



Critical needs for One Health

Culture change – *Reflexion* - appreciation for the importance of the connection between humans, animals and ecosystems;

Increased visibility – evidence-based recognition of the value added by operationalizing the One Health approach in preventing, detecting and controlling diseases that impact both humans and animals;

Designated funding – to support interdisciplinary collaborative programs especially preventive measures, focused on environment, development and behavior.

Improved coordination – inter-sectoral collaboration in surveillance, communications, outbreak response and sample sharing.

Acknowledgements

Royal Veterinary College

London School Hygiene and Tropical Medicine

FAO, WHO, OIE, IUCN,

World Bank

Chatham House

CDC and Stone Mountain Working Groups

Centre for One Health Research (COHR)

Washington University

AHEAD & HEAL & NEOH

Swiss Tropical Health Institute

NEOH colleagues

