

EDUCATION AND CAPACITY BUILDING SESSION

This is a report of the session on Education and Capacity Building that took place on 7th October 2016 in Brussels, in the framework of the European OneHealth/EcoHealth workshop organised by the Belgian Community of Practice Biodiversity & Health which is facilitated by the Belgian Biodiversity Platform



Session coordinator: Nicolas Antoine-Moussiaux & Maarten Vanhove

INTRODUCTION

One Health and *EcoHealth* approaches were first promoted in the *Global South*, where they still hold a crucial importance, raising diverse challenges from the high diversity of societal and environmental contexts.

To prepare the future generation of *One Health* and *EcoHealth* practitioners for the *Global South*, many education and capacity-building initiatives are now developing. Also, while the *One Health* approach often focuses on the link between veterinary and medical sciences, these initiatives, tied to educational or research programs, strive to foster the needed inter- and transdisciplinarity.

How do research and education programs in the *Global South* contribute to the building of these

competences? And how then is the environmental component taken into account (e.g. influence of anthropogenic change on human and animal health)?

This session presents educational experiences as well as environmental projects in the *Global South* or in the framework of North-South and South-South cooperation. It discusses the particular challenges posed by *One Health* and *EcoHealth* approaches in terms of field capacity-building and longer education programmes.

The issues at stake during this session were put forward by a series of five short introductory talks (see ‘Presentations’ in the following pages).

PRESENTATIONS

[Franck Insignares & Erika Cherel](#) (Oniris: *Ecole Nationale Vétérinaire, Agroalimentaire et de l'Alimentation Nantes-Atlantique*) introduced the attendees to MAN-IMAL, an innovative training programme inspired by the *One Health* concept, focusing on the interlinkage between human and animal health with agriculture. It offers international and cross-disciplinary Master's and undergraduate teaching in a partnership between 15 research units from four institutes for higher education. The team and its innovative approach of education (*through pedagogical engineering, training courses for teachers...*) were presented, as well as the efforts for outreach and linkages towards the academic and general public.

Next, [Lai Jiang](#) (Prince Leopold Institute of Tropical Medicine, Antwerp & KU Leuven, Leuven) offered the talk “*One Health in higher education: Challenges and opportunities*”. Starting from the observation that the *One Health*

framework is cross-sectoral and interdisciplinary by definition, this presentation called upon *One Health* workers, coming from their respective disciplines, to maintain an open mind, think critically and acknowledge the limitations of their own frameworks. It proposed communication skills to be central in the learning goals of any *One Health*-oriented curriculum. Learning together as a preparation for working together, as well as competency-based curriculum development, were suggested as opportunities for *One Health* curricula to offer added value.

To bring a concrete example of the cross-sectoral needs and challenges from the field, [Tine Huyse](#) (Royal Museum for Central Africa, Tervuren & KU Leuven, Leuven) presented the challenge and importance of introducing environmental aspects in *One Health* questions in the *Global South*, through her presentation entitled “*Dam constructions and disease outbreak: the case of human*



Lai Jiang presenting challenges and opportunities of One Health in higher education

and veterinary schistosomiasis in Senegal”. After introducing *schistosomiasis*, its effects, potential treatments and challenges, the link between dam construction and this disease in Senegal was explained. Ecological changes causing the spread of intermediate snail hosts combined with increased agriculture, recreation and water contact by humans and livestock, led to an outbreak of a previously absent species of *schistosoma*. Despite the activities of a host

of teams from many different backgrounds, it is clear that mass treatment alone did not reach the desired goal and that *schistosomiasis* remains rampant in the area. An integrative approach considering the hosts, the parasites and the environment is proposed. Gaps in the needed cross-disciplinary collaborations and communication were identified, as well as a need for education and societal outreach.

Another case study in Africa was presented by [Maarten Vanhove](#) (Royal Belgian Institute of Natural Sciences, Brussels & KU Leuven, Leuven): “Capacity building for an assessment of the impact of mining in Katanga (D.R.Congo) on fishes and their aquatic habitats”. In a collaboration between KU Leuven, the Royal Museum for Central Africa, the University of Antwerp, the Royal Belgian Institute of Natural Sciences, the Université de Lubumbashi (D.R.Congo) and the University of Limpopo (South Africa) and funded by VLIR-UOS, junior Congolese scientists are trained in ecotoxicology and in the identification of fishes and fish parasites with the aim of better evaluating the impact of mining pollution on fish and ecosystem health. The Congolese host research unit and the study system in the *Upper Lufira Basin* were introduced, and results were communicated focusing on trace metals and on monogenean fish parasites. Discussion topics were offered, e.g. with regard to defining policy relevance

and stakeholder involvement, and the challenge of intensive small-scale capacity-building to convey techniques to collect baseline data (in this case e.g. the identification of parasite species).

[Dr. Yalacé Kaboret](#), Director of the *Inter-State School of Veterinary Science and Medicine of Dakar*, offered a talk on the *Practice in West-Africa regarding the One Health approach*. Prof. Kaboret sketched the regional profile of West Africa with its economic, nutritional, poverty-related and eco-climatic challenges, zooming in on issues of human and animal health and the various risk factors and interlinkages. In this context, a lack of communication and horizontal integration inevitably limits the potential to minimize the risk of disease (re-)emergence. He continued to highlight the need for multi- or interdisciplinary and cross-sectorial communication and coordination, and for capacity development in this regard, including monitoring and



Discussions on education and capacity-building

response. The collaborative approach of the *Interstate school of veterinary science and medicine* was aptly illustrated by its philosophy of cultural integration and pooling of resources. The work of this school, together with a range of donors and other institutes, contributes to the *Global Health Security Agenda*. An overview

of initiatives was given, including a student society, train-the-trainer activities, curriculum development, scholarships, research support and capacity development regarding leadership, biosafety/biosecurity and administration.

DISCUSSIONS

The ca. 15 participants to this session convened on the central importance of teaching “*soft skills*” such as interdisciplinarity, interculturality, conflict management and leadership, in the agenda for *One Health* education.

The implementation of *One Health* calls for an involvement of people from various disciplines with different ideologies or belief systems. This means that not only natural, health and social scientists need to be involved: the same dynamics should include actors such as businesses, governmental and non-governmental organisations, policy makers, civil society and diverse professionals involved. Hence, it is recommended to also teach about this transdisciplinarity and the needed soft skills that will facilitate this process.

Also, *One Health* and *EcoHealth* typically apply to what is termed now “*wicked problems*”,

referring to the scientific notion of **complexity**. Therefore, to gather the right people in this transdisciplinary process, a deep understanding of the complexity at stake is needed, calling for other central skills that are system thinking and strategic thinking to approach complexity.

The attendees demonstrated with a number of examples how the involvement of these different disciplines presents a challenge: (1) when defending a grant proposal before an interdisciplinary jury; (2) with regard to the example of *schistosomiasis* outbreaks: various teams work in the same region, without knowing each other’s work.

Since the integration of human, animal and environmental health is a necessity inherent to any *One Health* approach, this **holistic philosophy of integration** should also be applied throughout *One Health* education. This goes



Maarten Vanhove presenting session outcomes to the plenary with on the far right his co-coordinator Nicolas Antoine-Moussiaux

against the usual silo organisation of science teaching, and represents an important challenge to education professionals.

This session also highlighted the importance of **capacity development** (including monitoring, detection, pathogen identification) in the *Global South* and of the involvement of the *Global South* in general. A train-the-trainer approach is important and recommended. Also, to get the

desired outreach, well beyond the number of people that could be trained through long master programs, this training of trainers should target specific needs through short-term, field-based education, such as so-called *summer schools*.

It became evident that **challenges** and questions remain:

- The **accessibility of One Health education and capacity building** is partly an issue of

scale: what are the needs and opportunities of large-scale and small-scale capacity building? (e.g. the accessibility of entire MSc programmes versus the practicalities of technology transfer to individual scientists)

- Should the suggested approaches be mandatory within *One Health* training? This includes the question whether to apply these approaches throughout *One Health* training programmes or do they just constitute a single module within a whole course program or both?
- What are the possible strategies/criteria to identify and prioritise the training needs?
- How can the concept of *One Health* be promoted throughout the institutions and in policies related to health, environmental, and education sectors?
- What are the optional strategies for outreach to policy makers and to the general public, taking into account cultural sensitivities?
- How to incorporate experiences from universities and other

actors of development in a coherent overarching strategy repertoire for *One Health Education* in the *Global South* as well as in the *North*?

The participants of this session were able to propose potential **solutions** and **suggestions**:

- Why not create more opportunities for people from different disciplines to learn together with the aim to foster collaborative work/ research/ education?
- The integrative approach should not only be part of health-related *curricula*, but should also be incorporated into economy, social sciences, etc. It should also consider environmental and ecological dynamics which are often overlooked.
- Promoting the use of evidence-based innovative educational approaches, to document the benefits and further advocate the need for these approaches. This advocacy effort would be especially directed towards an audience of (*life*) scientists who may

be unaware (*and therefore sceptical*) about the value of qualitative approaches or feel uncomfortable about the teaching of soft skills.

- Finding inspiration or case studies in a given country for best practice for documentation and diffusion.

Discussions also continued after the workshop, and the following ideas for follow-up activities were raised:

- Create a *Community of Practice* on education & capacity building for interdisciplinarity in health.
- Organise workshops or other interactions enabling educational scientists and life scientists to discuss evidence-based innovative educational approaches and the

need to produce policy-relevant data on integrative *One Health* approaches.

- Write a joint opinion / position paper.

Videos and presentations accessible at:
<http://www.biodiversity.be/health/58>