DR BARBARA HÄSLER, CHAIR OF THE NEOH COST ACTION, MET WITH PEN AT ESOF2016 TO DISCUSS THE ACTION AND THE NEED FOR A MORE HOLISTIC APPROACH TO HEALTH

One Health

Human health and wellbeing are increasingly affected by global challenges such as malnutrition, emerging and endemic zoonotic diseases, antimicrobial resistance and climate change. A 'One Health' approach has been proposed to tackle the challenges through accepting that their complexity requires interdisciplinarity.

No standardised methodology exists for quantitative evaluation of One Health activities. Therefore, the COST Action 'Network for Evaluation of One Health' (NEOH) aims to enable future quantitative and qualitative evaluations of One Health activities, and to further the evidence base by developing and applying a science-based evaluation protocol in a community of experts.

Pan European Networks met with the chair of the Action and a lecturer at the Royal Veterinary College, Dr Barbara Häsler, at the EuroScience Open Forum (ESOF) event in Manchester UK, to discuss the Action and the need for a more holistic approach to health.

Dr Barbara Häsler

COST (European Co-operation in Science and Technology) is a pan-European intergovernmental framework. Its mission is to enable breakthrough scientific and technological developments leading to new concepts and products, thereby contributing to the strengthening of Europe's research and innovation capacities.

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Could you begin by outlining how the relationship between health and the environment has changed in recent years as a result of globalisation, and how the challenges have thus become more complex?

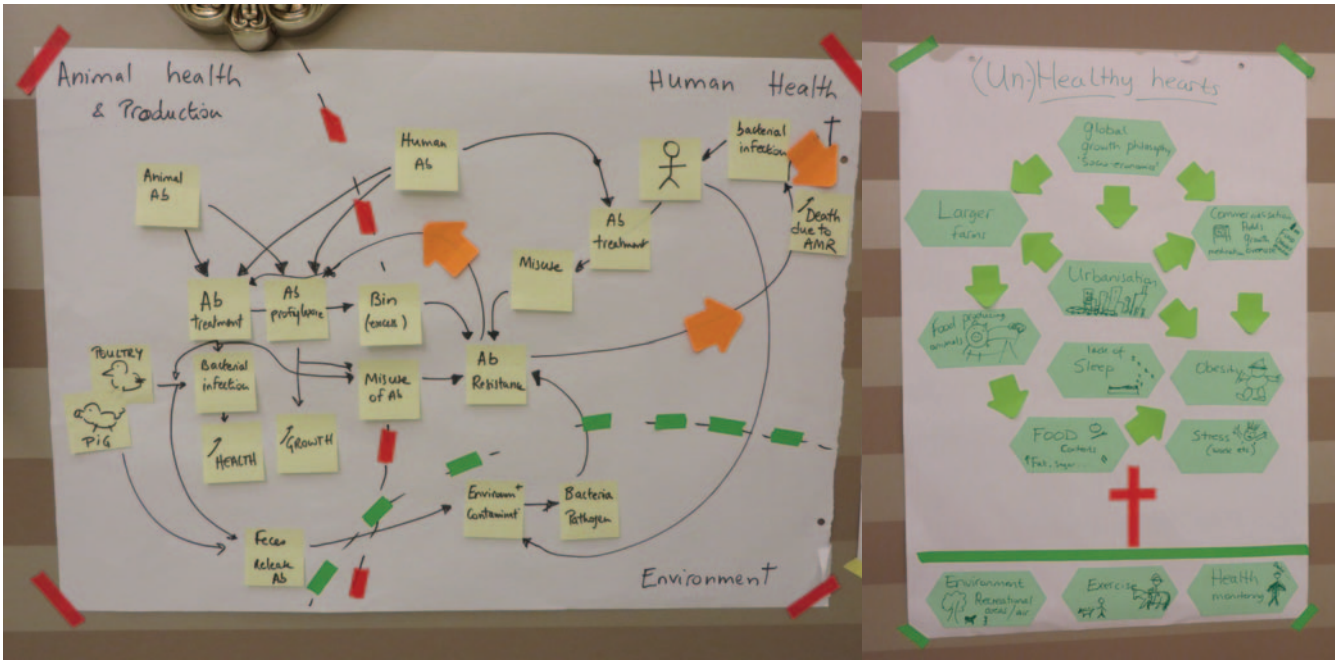
In many cases, when people think of 'the environment', they only think about what might be termed 'the green environment'. There are many more dimensions to be taken into consideration, including the sociocultural, economic, institutional and ecological environments. As you have pointed out, our environments are rapidly changing as we move towards a more globalised society which sees an increasing amount of mobility and trade across borders.

NEOH members discussing the characteristics of One Health during a training school

We are also witnessing changes that are coming to have a direct impact on human health, for example emerging diseases. They are influenced, for instance, by the way people and goods move across borders, changes we are now seeing in agricultural practices, as well as climate, habitat and land use change. We know that a lot of the emerging diseases that spread between animals and humans originate in animal populations and are transferred to people.

Indeed, a significant issue is to better understand how the changes to food systems that are necessary to cope with increased population growth, changes in income and changes in lifestyle can be handled in a sustainable and equitable manner. For instance, to satisfy the changing demand we keep increasing numbers of livestock in more intensive systems, use different breeds and feed different diets. These changes can create room for disease emergence and have an impact on food safety and food security.

Additionally, there are also issues related to contaminants in the environment which can



An example of how NEOH members conceptualise complex health challenges

range from toxic particles in the air or water to microplastics and pathogens in food and even to antimicrobial resistance, which is a very serious problem.

The situation is thus complex. Because of this situation we cannot rely on just one single discipline or sector to address this challenge; we need to bring the different disciplines together in a One Health approach.

That, of course, is where COST is perfectly designed to bring together different networks, disciplines, dialogues and perspectives on the same problem. Indeed, your Action highlights the need for the combined expertise from veterinary and public health specialists, environmental specialists, economists, sociologists, epidemiologists, nutrition researchers and political scientists. Yet, you have also highlighted that a silo mentality is perhaps preventing this from happening. How do you think this can be addressed?

Each time I attend a conference where some of these challenges are being addressed, there are always calls for more integration, interdisciplinarity and collaboration. Furthermore, over the years many funding bodies have moved towards more interdisciplinary calls, explicitly stating that they want to bring the natural and social sciences together and that they want to have projects that look at the system as a whole and don't just focus on one aspect. Thus, the recognition is there.

In my eyes, one of the major hurdles stems from the fact that the academic environment is slow to follow this change. It remains very disciplinary focused, with reward structures focused on disciplinary excellence. Furthermore, from my own experience from working in interdisciplinary teams, I have found that it can be very difficult to publish interdisciplinary work in a scientific journal because they are usually topic specific and may not cover all of the relevant disciplines you have tried to bring together in your manuscript. This is a particular issue given that academics experience a high degree of pressure to publish in high impact journals, and if these are topic or focus-specific it can be a major barrier to more interdisciplinary collaboration that has true integration.

Additionally, the academic setting itself can be a problem, in that it is sometimes difficult to work with colleagues from other disciplines or fields because you have been brought up in a working environment with a certain culture and with specific paradigms, methodologies, languages and terminologies. When you do begin to collaborate with people from different fields, there is often a prolonged 'storming and forming' phase where you try to understand why other people do the things they do and why they work in a certain way and how you can move forward together. Indeed, it can take some time to find the necessary answers, and in many instances you may not have the time or the enabling environment to support such a process.

How did you address that in your Action?

We discovered quite early on that you have to bring people together and let them discuss and explore thoughts and ideas. That is exactly what the funding from COST allowed us to do. Within the Action we have a range of networking instruments that support this process, meaning that we can hold meetings, workshops and training schools. From doing this, we found that every time we get together in a single room there is a lot of very good energy and people start to talk more openly and come to challenge each other; they like to explore boundaries and they usually go away feeling very motivated and stimulated. Without this face-to-face interaction I don't believe we would have seen the same level of progress.

Interdisciplinary work needs dialogue, it needs reflection, and it is a constant integrative process.

Given the trend of increasing urbanisation – and thus the growth of mega cities and the many health implications that can be expected to grow alongside this – what more do you feel can be done on the part of those responsible for sustainable development, urban planning etc. moving forwards?

Our team at the Royal Veterinary College has been involved in a multi-partner, multisectoral project in Nairobi,[1] led by Professor Eric Fèvre from the University of Liverpool, which focuses on understanding disease emergence in the peri-urban/urban environment. This is an interdisciplinary project with different work streams that look at, on the one hand, the economics and the livestock value chains in the city, and on the other at social planning policy and urban development. There are also strong microbiology and genetics components that analyse samples from humans, livestock, food, wildlife and the environment to understand bacterial occurrence and diversity within Nairobi, and how this differs across socioeconomic groups, in different housing types and in relation to livestock keeping practices.

Within the project we worked in poor urban households looking at how people live, what they eat, what foods they like and how much they spend on food, as well as what their awareness is in terms of disease transmission, for example. Particularly in urban slums we found that food hygiene is often poor and that there are serious levels of undernutrition. I think it is necessary to bring information to the people who live in this area and to provide training on food hygiene and healthy diets. At the same time there needs to be a higher level change by influencing policy makers to raise awareness of these issues and provide recommendations for better food safety and food security.

How do you hope to see a better evaluation of the added value of a One Health approach taking place, and can you tell me a little about how NEOH will develop a robust and standardised framework including metrics and associated methods for the evaluation of One Health initiatives?

One Health can be defined as a concept that brings together different disciplines in an integrated way to take a systems approach towards health. This is not dissimilar from other concepts like 'eco-health' or 'agri-health' or even 'ecological public health' and other concepts and philosophies that have emerged over the past decades.

Indeed, there are a lot of similar concepts out there that emerged from different directions. One Health has been quite strongly promoted by the animal health community, who recognised early that animal and human health are very closely linked. This then evolved further to take a wider approach and to include, for example, environmental considerations.

The concepts are all similar in that they aim to bring together different disciplines, sectors and innovative approaches to address the system as a whole and to solve problems in an holistic way. There has been a lot of talk recently about the added value of One Health, and quite a strong lobby has pushed for One Health and promoted it worldwide in different communities. Indeed, the concept gained quite a bit of momentum, but at the same time we felt that there was still a very large group of people out there who do not think in this more systemic way.

We then asked ourselves what needs to happen to have more One Health engagement, and from this we decided that more evidence on its added value was required. For this reason we organised a workshop in London, UK, a couple of years ago with the aim of finding out what metrics would be suitable to measure this added value and whether we could agree on suitable metrics for One Health benefits.

We spent the day with people from academia, NGOs and governments from different countries with different disciplinary expertise, and we concluded that we don't actually need new metrics, but we do need to have a standardised approach to combine existing metrics so that different One Health initiatives can be compared. Based on that, we submitted the proposal to COST to fund the network for the evaluation of One Health. Once we were successful we were able to begin bringing people together to develop an evaluation framework so as to have more quantitative and qualitative evidence on what does and doesn't work in One Health, whether there is added value or not, and what type of value that actually is.

A NEOH workshop in the COST premises in Brussels to promote stakeholder engagement

What stage have you reached now with NEOH, and what have been the major hurdles you have experienced thus far?

We have now created a draft version of our handbook for the evaluation of One Health, which is in line with the plan we proposed at the beginning of the Action. That was developed in Working Group One and has now been given to Working Group Two, which will apply the evaluation framework to a series of case studies with the aim of testing the framework and the handbook, giving feedback and, of course, evaluating the case studies and providing evidence on the added value of One Health.

Are you on schedule?

Yes, we are. We have the product that we wanted to create, and while it is a little more extensive than we originally planned, it definitely serves the purpose. It has been quite a challenge to bring together the many different ideas and philosophies and the different ways of working and formulating solutions to challenges across NEOH. But we are very happy with the progress we have made so far and are glad to have created a first handbook version that people can actually use to evaluate the case studies.

We recently held a training school in Serbia to present the handbook and to help people familiarise themselves with it and also to work with them on the design of their case studies. So it seems that a lot of NEOH participants are now getting into the One Health evaluation way of thinking. That is a major milestone for us.

You mentioned that COST has really been fundamental in helping to bring people together. How else has COST been of benefit?

In addition to providing the opportunity to develop the network and bring people together, we also work with a scientific officer from COST who is incredibly helpful in answering questions, providing information, looking for further research opportunities, and giving us information about funding calls which may be appropriate for our Action.

COST also allows us to use their facilities in Brussels to hold meetings and help with the organisation, which is also a major plus. COST also supports our dissemination activities by, for example, providing us with the opportunity to attend conferences such as ESOF. COST's assistance goes beyond just providing funding; they offer a whole package of support.

NEOH participants attending a meeting at the Royal Veterinary College in London

Finally, what are your hopes for the future, and where will your priorities lie in perhaps both the short and long terms?

We will conduct the case studies and analyse the results through a meta-analysis as a next step before including the feedback in a revised version of the handbook. There may also be a second part of the handbook in which we present the case studies to provide recommendations for policy makers based on what we find in them.

But things shouldn't stop there; we see the Action as a step towards more collaboration and more integration and, hopefully, towards better solutions for the complex challenges we have already discussed. We want to keep the network alive, and we would like to continue to collaborate and continue to expand.

We noticed that in many countries either no One Health evaluation takes place or there is very little, so there is clearly still a lot to do; we are only just starting to reach some of those countries and people.

The next major step for us will therefore be to explore how we can continue what we have started, how we can acquire more funding, and how we can find new ways of collaborating in order to continue working on the promotion of One Health.

1 See: http://www.zoonotic-diseases.org/project/urban-zoo-project/

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