



BIODIVERSITY AND HEALTH
Belgian Community of Practice



REPORT OF THE EUROPEAN ONEHEALTH/ECOHEALTH WORKSHOP

I. BACKGROUND/INTRODUCTION

1. The importance of human health interlinkages with nature and the environment in general has gained attention in science, policy and society at large. The recent State of Knowledge review *Connecting Global Priorities: Biodiversity and Human Health*¹, co-led by the Convention on Biological Diversity (CBD) and the World Health Organization (WHO), provides a comprehensive overview of the diversity and complexity of the interlinkage between biodiversity and human health and examines related opportunities and challenges at the science-policy interface. In order to better address all (or subsets of) interrelated aspects of biodiversity and human health in an integrated and holistic manner, several integrative frameworks emerged over time. The WHO-CBD *State of Knowledge Review* draws on integrative approaches such as One Health, EcoHealth and Planetary Health. Such approaches, which explicitly consider impacts on human, animal and ecosystem health are closely aligned with the ecosystem approach, which is the primary framework for action under the Convention. Several key messages - tailored to the scientific and policy communities and society at large - include supporting integrative approaches such as One Health as integrative frameworks for addressing the science-policy challenges at the human-animal-ecosystem health interface.

2. CBD decision XII/21 on biodiversity and human health recognizes the relevance of the linkages between biodiversity and human health for the 2030 Agenda for Sustainable Development and the Sustainable Development Goals, and, in this context, also invites Parties and other relevant stakeholders to consider the findings of the *State of Knowledge Review* to identify opportunities for mutually supporting implementation of national biodiversity strategies and action plans and national strategies, plans and programmes for human health. That same decision also recognized the value of the One Health approach to addressing the cross-cutting issue of biodiversity and human health. A recommendation made at the nineteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) further emphasized the value of this approach. In line with this decision, Parties, including European governments, are invited to contribute to and report on their progress toward these objectives, including as a contribution to the achievement of the Aichi Biodiversity Strategy 2011-2020, Aichi Biodiversity Target 14 and related targets.

3. The [European OneHealth/EcoHealth workshop](#) aimed to support this goal in line with work carried out under the CBD-WHO joint work programme on biodiversity and human health. Given the

¹ Available at <https://www.cbd.int/health/SOK-biodiversity-en.pdf>

similarities in their stated objectives, OneHealth and EcoHealth concepts were addressed as a single approach, illustrating the aim to go beyond narrow and restricted framings of integrative approaches. The focus of the European workshop was on making connections and building bridges across environmental, public health and other sectors. It brought together people from different communities in science, policy and practice to exchange experiences and views, and to discuss opportunities and challenges for integration and practice.

4. The general objective of the workshop was to build bridges on OneHealth, EcoHealth and related concepts that try to combine ecosystem-, animal and human health, and to build bridges between science, policy and practice working on nature and health. During this workshop we discussed challenges and practical steps forward that will feed into a synthesis report at the end of the workshop. Further the aim is to produce a workshop report, recommendations at the policy, research and practice levels, policy briefs and scientific papers building on the discussions.

5. Accordingly, the [Belgian Community of Practice Biodiversity & Health](#) (COPBH) initiated the organization of the workshop that was generously financed mainly by the [Belgian Biodiversity Platform \(BBPF\)](#), [Belgian Federal Public Planning Service Science Policy \(BELSPO\)](#) and [Belgian Federal Public Service Health, Food Chain Safety and Environment - DG Environment](#) and with additional budgets from, [Veterinary and Agrochemical Research Centre \(CODA-CERVA\)](#), [Institute of Tropical Medicine of Antwerp \(ITM\)](#), [Royal Belgian Institute of Natural Sciences \(RBINS\) \(CEBioS program: Capacities for Biodiversity and Sustainable Development\)](#), [University of Liège, Faculty of Veterinary Medicine \(ULg\)](#), [Scientific Institute of Public Health \(WIV-ISP\)](#), [Network for Evaluation of One Health \(NEOH\)](#).

6. The workshop organization was coordinated by Hans Keune (COPBH/BBPF) with support from representatives from several [Belgian and international organizations](#): Lucette Flandroy ([Belgian Federal Public Service Health, Food Chain Safety and Environment - DG Environment](#)), Thierry van den Berg, Marcella Mori and Nick De Regge ([Veterinary and Agrochemical Research Centre \(CODA-CERVA\)](#)), Séverine Thys ([Institute of Tropical Medicine of Antwerp](#)), Maarten Vanhove ([Royal Belgian Institute of Natural Sciences \(RBINS\) \(CEBioS\)](#)), Nicolas Antoine-Moussiaux from the [University of Liège, Faculty of Veterinary Medicine \(ULg\)](#), Javiera Rebolledo and Herman Van Oyen ([Scientific Institute of Public Health \(WIV-ISP\)](#), [Research Institute Nature & Forest \(INBO\)](#)), Cristina Romanelli ([CBD and UNU IIGH](#)) and Marina Maiero ([WHO](#)), Barbara Haesler [Network for Evaluation of One Health \(NEOH\)](#), Aurélie Binot ([French agricultural research and international cooperation organization \(CIRAD\)](#)), Wim Hiemstra from Dutch Farm Experience/Natural Livestock Farming.

7. In the workshop a wide diversity of [experts](#) contributed: from different professional backgrounds (science, policy & practice), different fields of expertise and countries, both within Europe and beyond, as well as a combination of senior and junior experts. This included natural scientists, health scientists and social scientists, policy representatives from national governments and the EU, and experts working in Europe, but also in other regions in the world. For an overview of the various fields of expertise represented in the workshop, please see the participants list and at the different parts of the [program](#) (see below for more detail).

8. The [workshop program](#) featured a combination of [topical and generic integrative sessions](#). In the topical sessions, specialists exchanged experiences from their specialized fields and projects, whilst addressing reasons and ways to apply the OneHealth perspective in their respective specialized fields. The topical sessions displayed on the one hand a focus mainly on health risks ([Vectors and vector borne diseases](#), [Zoonotic diseases](#), [Cross-pollinating agro-eco-human health perspectives to reduce antimicrobial resistance \(AMR\) threats](#)) and on the other a focus mainly on health benefits ([Environmental and internal microbiome](#), [Nature health benefits](#)). The diversity of issues addressed in the workshop were selected to be reflective of the diversity of thematic areas addressed in the CBD – WHO *State of Knowledge Review*. It was noted by participants that such a broad range of cross-sectoral issues tends to be uncommon in expert meetings: particularly among expert communities that tackle health benefits or rather risks from biodiversity, as these still tend to be discussed in different fora.

9. In the second plenary part of the OneHealth/EcoHealth workshop participants jointly discussed experiences, opportunities and challenges surpassing generally restricted topical foci. These discussions

built upon a One Health [survey](#) shared among a wide range of relevant experts from science, policy and societal practice prior to the workshop. Parallel sessions were also held on 1. [Evaluation and challenges/limitations of One Health](#), 2. [Social science, transdisciplinarity and traditional knowledge systems](#), 3. [OneHealth/EcoHealth in the Global South: interdisciplinarity building in research and educational challenges](#). Throughout each of these sessions participants discussed lessons learned and key messages on next steps.

10. This report provides an overview of the workshop program, sessions, and discussions, including next steps. Annexes to this report present more detailed information, including the resulting workshop conclusions (annex I). The full workshop programme is presented in Appendix I.

II. SUMMARY OF PROCEEDINGS

ITEM 1. FIRST PLENARY: OPENING OF THE WORKSHOP

11. The workshop opened on Thursday October 6 2016. During the opening ceremony, Ms. Aline Van der Werf welcomed the participants to the [Belgian Federal Public Planning Service Science Policy \(BELSPO\)](#) where the meeting was hosted, emphasizing the importance of community building on this important topic for science, policy and practice. The first plenary session, chaired by Dr. [Thierry Van Den Berg](#) (CODA-CERVA), began with key introductory presentations. The first presentation on [Biodiversity and Human Health: Context and opportunities for cross-sectoral collaboration](#) aimed to discuss the institutional context that led to the development of the *State of Knowledge Review* under the CBD-WHO joint work programme, providing an overview of key thematic areas and emphasizing the cross-sectoral collaboration required to successfully mainstream its findings and to meet global commitments including for the Strategic Plan for Biodiversity 2011-2020 and the Sustainable Development Goals. This was followed by Prof. Richard Kock (Royal Veterinary College of the University of London) with a presentation on [Emerging diseases and the environment - can't see the wood for the trees?](#). He pleaded for a broader vision on health, not focussing only on human health, but also focusing on the need to adopt integrative approaches to address the challenges associated with infectious disease outbreaks. Prof. Serge Morand (University of Montpellier & CIRAD) followed with a presentation on [Biodiversity and Health](#), discussing the impacts of biodiversity loss on human health and challenges of dealing with related complexity. Finally, Ms. Birgit Van Tongelen (EU – DG Research and Innovation) presented [Fighting Infectious Diseases and Advancing Public Health - Emerging epidemics](#), introducing the EU activities related to One Health research.

ITEM 2. TOPICAL PARALLEL SESSIONS

12. After the first plenary, topical parallel sessions focussed on the one hand mainly on health risks and on the other mainly on health benefits.

13. A [Vectors and vector borne diseases](#) session was coordinated by Nick De Regge (CODA-CERVA), Isra Deblauwe (Institute of Tropical Medicine Antwerp) and Steven Van Gucht (WIV-ISP). It focussed on the complex transmission cycle used in our interacting living world by some microbes and other organisms, involving various hosts for their survival, reproduction and spread. This is the case for what we call vector borne diseases (VBD). Such pathogens are transferred between hosts by invertebrate vectors that do not suffer from their presence but they (occasionally) cause harmful effects to their human and/or animal host. Current environmental changes linked to human activities (a.o. climate change, landscape changes) together with increased globalization and the use of antimicrobial products and insecticides can rapidly change the distribution, composition, abundance and dynamics of pathogens and vectors. This can result in changes at the pathogen - vector - host interface and could potentially be accompanied by changes in host spectrum and pathogen virulence. The session illustrated these changes through actual examples and discuss how this evolution requires to develop or adapt monitoring and management plans towards vectors and VBD, in particular in Belgium and Europe but also through One Health/EcoHealth approaches on the field in developing countries, and through adequate and coherent international collaboration of concerned actors in different sectors. The session started with introductory presentations by Albert Godal (Ministère de la Santé – France) on [Entomological surveillance in France](#)

[and vector control around imported cases](#), Wim Van Bortel (ECDC) on [Challenges of vector-borne disease surveillance and control from a European perspective](#), Veerle Vanlerberghe (ITM) on [Epidemiological aspects of the current Zika virus outbreak and the Belgian response strategy](#), after which disease specific presentations followed.

14. In parallel a [Zoonotic diseases](#) session was coordinated by Marcella Mori (CODA-CERVA) and Javiera Rebolledo (WIV-ISP). The session focussed on how many people interact with animals in their daily lives. We raise animals for food and keep them in our homes as pets. As the current human population continues growing, these interactions become more and more important due to the fact that we invade more and more the territory/habitat of wildlife. Increasing movements of people, as well as an increased trade in animals and animal products is also one of the factors that may account for new emerging zoonoses. In this particular session, the scientific developments were discussed with an integrated view of some important zoonosis (Non-food borne zoonotic diseases), as well as the current means of monitoring and management together with the needs for future. The session aimed to conclude with a historical view on the management of zoonotic diseases and the lessons that have to be learned for the future. The session started with introductory presentations by Prof. Sally Cutler (University of East London) on [Blurring boundaries - zoonoses in the twenty-first century](#), Dr Marius Gilbert (Université Libre de Bruxelles) on [The emergence of avian influenza, a One Health epitome](#), Dr. Sophie Quoilin (WIV-ISP) on *Zoonoses in humans: not so many under surveillance*, Prof. Claude Saegerman (University of Liege) on [Animal surveillance: a key component of zoonosis surveillance](#), and Prof. Jacques Godfroid (the Arctic University of Norway) on [From Brucellosis Control in Livestock to Brucella Ecology in Wildlife](#).

15. A [Cross-pollinating agro-eco-human health perspectives to reduce antimicrobial resistance \(AMR\) threats](#) session was coordinated by Wim Hiemstra (ETC Foundation) and Aurélie Binot (CIRAD). The session focussed on the global threat of antimicrobial resistance (AMR) which poses an important challenge for human, animal and environmental health experts and practitioners to overcome disciplinary silos and speed up understanding and action towards a One Health-Eco Health approach and practice. The session aimed at dialogue about current scientific understanding on AMR, antibiotic resistance (ABR) and experience from practice in fighting antibiotic resistance. In the morning session, three presenters reflected on how the human, animal, environmental streams of information on AMR-ABR were brought together in a practical way, thus presenting a systems perspective. The afternoon session deepened presenters' and participants' experiences to identify pitfalls and potentials for collaboration for a One Health – Eco Health approach and practice. As in all sessions, One Health – Eco Health interdependencies were visualized and presented in the plenary. The session started with the following introductory presentations: Prof Serge Morand (University of Montpellier & CIRAD) on [AMR and environmental management within a EcoHealth perspective, the need for the integration of biodiversity features into human health for more resilient socio-ecosystems](#), Katrien van 't Hooft (Dutch Farm Experience/Natural Livestock Farming) on [ABR and the need to phase out antibiotic use in agriculture by improving animal husbandry from a natural perspective](#), and Jean-Charles Cavitte (EU DG Agriculture) gave a short introduction about the work in the EU.

16. A session on the [Environmental and internal microbiome](#) session was coordinated by Lucette Flandroy ([Belgian Federal Public Service Health, Food Chain Safety and Environment - DG Environment](#)) and Prof. Dr. Ellen Decaestecker (KULeuven). The session focussed on microbial diversity, a big part of which contributes to equilibrium and cycles of the ecosystems, and a small proportion of them have already been used by man for their pharmaceutical and other industrial purposes. Not only the planet but also our bodies are complex ecosystems, containing ~ ten times more microorganisms than human cells, on our skins, gut, airways, urogenital tracts. A better understanding of the specific roles of various environmental microbes, of their interactions with each other and with our bodies, should help avoiding or curing chronic physical and mental diseases associated with urban life in developed countries but also in fast growing cities of developing countries. The session reviewed current knowledge on this issue, and suggested, on that basis, recommendations to move forward in science, policy and practice. The session had several presentations, including introductory presentations from Lasse Ruokolainen (University of Helsinki) on [Ilkka Hanski' s legacy to allergy research: the](#)

[environment-microbiota-health axis](#), Xavier Stephenne (UCLouvain) on [Fecal transplantation and multiresistant germs](#), and Eeva Furman (Finnish Environment Institute SYKE) on [The biodiversity hypothesis: how to operationalize it?](#).

17. A [Nature health benefits](#) session was coordinated by Sjerp de Vries (Wageningen University) and Hans Keune (COPBH/BBPF). The session focussed on how nature benefits human health in many ways. Examples highlighted the importance of biodiversity to traditional and modern medicinal practice, and the utility of various species for medical research. Genetic and species diversity is functional to food production, and can play an important role in nutrition security including by potentially reducing risks of noncommunicable diseases often linked with poor nutritional quality (e.g. obesity, diabetes, micronutrient deficiencies). Biodiversity also plays a role in safeguarding air quality and access to freshwater, can help to mitigate against disaster risk, while supporting emergency responses and climate change adaptation. Furthermore, diverse natural environments may enhance experiences that reduce stress, support the development of cognitive resources, stimulate social contacts, attract people for physical activity, and support personal development throughout an individual's lifespan. Moreover, recent studies show that declining contact with some forms of (microbiotic) life may contribute to the rapidly increasing prevalence of allergies and other chronic inflammatory diseases among urban populations worldwide. Biodiversity therefore can have an important contribution to both public health related ecosystem services and the reduction of health risks. The session discussed a diversity of experiences, expectations, opportunities and challenges regarding nature health benefits work in science, policy and practice. The session included presentations from: Patrick Ten Brink (IEEP) on [Health and Social Benefits of biodiversity and Nature Protection](#), Peter van den Hazel (Phenotype project) on *Positive health effects of the natural outdoor environment in typical populations of different regions in Europe*, Sjerp de Vries (Wageningen University) on [Possible pathways linking nearby nature to human health and their relative importance](#), and Patrick Van Damme (University of Ghent) on [Developing global medicinal plant markets: panacea or disaster?](#).

ITEM 3. SECOND PLENARY: EXPERIENCES ON ONEHEALTH PRACTICE AND INTEGRATION CHALLENGES

18. This part of the program was developed in close collaboration with the Network for Evaluation of One Health ([NEOH](#)). NEOH aims to enable future quantitative 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. This plenary was chaired by Sue Welburn (Edinburgh Medical School). The plenary recognized that the One Health and related approaches have been gaining momentum. However it is not clear if and how the One Health concept is addressed, particularly in practice in many countries. A leading issue during this plenary session was to reflect on what science and policies include in the One Health concept and how scientific knowledge and policy strategies can go from theory to practice. Through case studies from Europe, Asia and Africa, the first part of this discussed the complexity (social aspects, social process) of knowledge operationalization and management. The session included the following introductory presentations: Barbara Haesler (Royal Veterinary College, NEOH chair) on [Network for Evaluation of One Health \(NEOH\)](#), Aurélie Binot (CIRAD) on [Strengthening synergies among disciplines and sectors & Challenging One Health stakeholders](#), and Hans Keune (COPBH/BBPF) on the [Workshop survey results](#).

ITEM 4. INTERACTIVE SUBGROUP DISCUSSION ON INTEGRATION CHALLENGES

19. Building on the survey presented in the second plenary Building on the survey presented in the second plenary five key integration challenges were identified.

(a) First *Data integration*. Key discussion questions proposed here were a) *How to setup linked databases dealing with heterogeneous data?*, b) *What are the alternatives to standardization of data?*, and c) *How to keep the necessary level of complexity, diversity and heterogeneity in data while modelling complex socio-ecosystems?*

(b) Second *Interdisciplinary and cross-sectorial collaboration*. Key discussion questions proposed here were a) *How to overcome the potential conflicts and gaps in knowledge across disciplines?*, b) *How to involve disciplinary institutions?*, c) *How to promote cross-sectorial collaborations among Environmental/natural resources management, public health, agriculture, rural development, land management sectors?*, d) *How to involve various types of stakeholders, intervening at different levels from local to transnational?*, e) *How to promote participatory processes? How to better articulate collective action and public actions?*

(c) Third *Developing soft skills*. Key discussion questions proposed here were a) *How to promote behavior and attitudes enabling an interdisciplinary framework?*, b) *How to smooth interest conflicts and power relationships among heterogeneous stakeholders?*, c) *How to manage conflicting points of view about complex one health issues?*, d) *How to promote interdisciplinary leadership?*

(d) Fourth *Recognition of One Health actions and research*. Key discussion questions proposed here were a) *How to acknowledge the legitimacy of interdisciplinary/cross-sectorial profiles and postures?*, b) *How to recognize the relevancy of the process of building interdisciplinary/cross-sector approach?*, c) *How acknowledge that building an integrated framework is a research topic/ an intervention in itself?*

(e) Fifth *How can interdisciplinary/transdisciplinary research get published*. Key discussion questions proposed here were a) *How to promote scientific excellence while elaborating interdisciplinary research at individual and collective (institutional) level?*, b) *Interdisciplinary/transdisciplinary research has great difficulties in getting published in scientific journals*, c) *Especially in the most well-known and most prestigious journals*.

The participants of the workshop were divided in subgroups of about ten participants. For each of these 5 areas, the subgroups discussed potential solutions as well as potential “success indicators” to assess and monitor the improvements of the integrated approach. This exercise was developed and moderated by Barbara Haesler (Royal Veterinary College), Aurélie Binot (CIRAD), Wim Hiemstra (ETC Foundation), Séverine Thys (ITM) and Hans Keune (COPBH/BBPF). This part of the program was closed with a brief reporting back.

20. In an evening address to participants, Mr. De Coster (chairman of the Direction Committee of the Belgian Federal Public Service Health, Food Chain Safety and Environment) informed that the vision One World – One Health had been adopted in the current administrative contract of the Belgian Federal Public Service Health, Food Chain Safety and Environment, emphasizing the responsibility of all involved; he called for collaboration between public organizations over geographic and policies borders and levels.

ITEM 5. GENERIC PARALLEL SESSIONS

21. To further support the more generic integrative perspective the workshop contained three generic parallel sessions focussing on issues relevant to all more topically focussed fields and practices in OneHealth/EcoHealth.

22. The [Evaluation and challenges/limitations of One Health](#) session, coordinated by Barbara Haesler (Royal Veterinary College) and Simon Ruegg (University of Zurich), addressed the challenges and growing enthusiasm for One Health. The session presented both practical examples and theoretical frameworks to discuss how we can measure what works and what does not work in One Health and how we can capture the added value to human, animals, society, and the environment. The session started with introductory presentations from Dr Alain Vandersmissen (European External Action Service) on [Historical developments of the One Health Movement since 2005 - Drivers, Opportunities and Challenges](#), Dr Abbas Omar (Chatham House, UK) on [Infectious Disease Risk Assessment and Management \(IDRAM\) Initiative](#), Dr Simon Ruegg (University of Zürich), “[NEOH evaluation framework, evaluating One Healthness](#)”, and Dr Sara Savić (Scientific Veterinary Institute Novi Sad) on [Preliminary results from a set of case studies evaluating One Health](#). Dr. Abbas Omar presented a project involving extractive industries in Africa in risk assessment and risk management of zoonotic diseases.

23. A session on [Social science, transdisciplinarity and traditional knowledge systems](#), coordinated by Séverine Thys (ITM) and Hans Keune (COPBH/BBPF), addressed the role of the social sciences in interdisciplinary and transdisciplinary research and science – society interfacing and inclusion of traditional knowledge systems, which is gaining increasing support and attention in different fields of interest. In some, this is well established (e.g. health and medicine), in others it is beginning to gain more attention (e.g. ecosystem services, wildlife management, environmental health, and, importantly, in the field of EcoHealth). In the field of One Health there still seems much to gain on including the social sciences beyond the restricted role of addressing the deficit of public understanding of the concept. In the session social science perspectives challenges, opportunities and barriers for and next steps for enhancing social science integration in One Health/EcoHealth practices were discussed with presentations from Steven Belmain (Natural Resources Institute, University of Greenwich) on [The role of social science in the OH movement](#), Melissa Parker (London School of Hygiene & Tropical Medicine) on *The biosocial approach*, Séverine Thys (the Institute of Tropical Medicine) on [The role of cultural anthropology in One Health](#), and Hans Keune (the Community of Practice Biodiversity & Health) on [Complexity and social scientific decision support in the field of environmental health and ecosystem services](#).

24. The [OneHealth/EcoHealth in the Global South: interdisciplinarity capacity building in research and educational challenges](#) session, coordinated by Nicolas Antoine (ULg) and Maarten Vanhove (RBINS), recognized the initial impetus of One Health and EcoHealth approaches in the Global South, where they continue to be crucial given their implications for development, 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, struggle to foster the needed inter- and transdisciplinarity. How do research and education programs in the Global South contribute to the building of these competences? This session presented educational experiences as well as environmental projects in the Global South and in the context of North-South cooperation. The session discussed the particular challenges posed by One Health and EcoHealth approaches in a spectrum of settings ranging from small-scale targeted field capacity building to longer education programs. The session included the following presentations: Lai Jiang (ITM) on the [OH challenges to educational science](#), Prof. Yalacé Kaboret, (Interstate school of veterinary science and medicine of Dakar) on the [Present trends and ongoing projects in OH education in West Africa](#), Tine Huyse (RMCA) on [Dam constructions and disease outbreak: the case of human and veterinary schistosomiasis in Senegal](#), Maarten Vanhove (RBINS) on [Capacity building for an assessment of the impact of mining in Katanga \(D.R.Congo\) on fishes and their aquatic habitats](#), and Franck Insignares & Erika Chereil (ONIRIS) on the [MAN-IMAL program](#).

ITEM 6. WORKSHOP CONCLUSIONS

25. Lucette Flandroy (Belgian Federal Public Service Health, Food Chain Safety and Environment – DG Environment) presented a synthesis of the workshop, to which Ladislav Miko (DDG of DG SANTE of the EU Commission) and Sophie Vandewoestijne (DG Research and Innovation of the EU Commission) reacted. Ladislav Miko underlined the constraint of the vertical, hierarchical structure of administrations at all levels in most countries, that has to be overcome to allow a broadly understood One Health approach at the policy level.

26. Several important issues were discussed throughout the workshop; we present some highlights:

(a) One Health, EcoHealth, Planetary health and related concepts share similar ambitions aimed at integration of various dimensions and realities that are influencing health. Though these different concepts have different histories within diverse expert contexts, the core message of integration are basically similar, and would benefit from greater complementarity in their implementation

(b) The importance of a broad understanding of One Health was underlined, and should not only concern links between human and animal health. One Health would benefit from also integrating food security, agricultural systems and rural development, soil health, well-being, social and cultural

drivers and perception of health. Further One Health may also include attention for benefits of nature to human health, and take into account environmental factors, e.g. climate change effects on the incidence of infectious diseases, as well as various chemical and physical environmental disturbances brought by human activities.

(c) Implementation of One Health/EcoHealth concepts can benefit from transdisciplinary/collaborative iterative process between policy, science and practice.

(d) When creating big One Health institutes one can run the risk of again building fences rather than creating openness to (new) collaborations. This may be overcome by focusing on open, collaborative networks like communities of practice which are less bounded and more flexible, and can be open to newcomers and new ideas and approaches. This need not be limited to scientific experts, but may benefit from being also open to policy experts, local knowledge, practitioners and so on.

(e) There is a need to develop clear understandings, criteria and indicators for application of One Health and related concepts. Next to clarity, these understandings may also benefit for some flexibility for tailoring to specific local contexts and processes.

(f) In order to overcome ad hoc reactive actions responding to emerging public health challenges relevant to One Health in its broader understanding, a more pro-active capacity by means of expertise centres and observatories may be considered relevant in order to be better prepared when needed.

(g) Inter- and transdisciplinary education at all levels would facilitate collaborative inter-and trans- disciplinary work and decisions in adult life.

(h) Cattle and cultivated plants biodiversity preservation and use, ex situ but mainly in situ, is not only a guarantee for future food security (by better resilience than mono-cultures and- strains facing environmental changes): it is also an insurance against amplification and diffusion of zoonotic diseases (since mono-strains and -cultures favour pathogens dispersion and amplification).

(i) The private sectors that use, transform, or sell biodiversity extracted elements or that disturb the ecosystems could be involved in the OneHealth/EcoHealth perspective: they could be made aware of sustainability concerns and risks of epidemics fostered by these disturbances, and take this into account to improve their activities towards a more sustainable environment and human health at the local and global level.

27. Building on the workshop an European OneHealth/EcoHealth Community of Practice can emerge which can support and nourish several concrete networking initiatives following from workshop sessions as well as existing initiatives and their follow-up, like NEOH. Some concrete examples of such initiatives emerging from the workshop are:

(a) A Community of Practice on transdisciplinary One Health education.

(b) A task-force on the role of social science in One Health/EcoHealth; currently a survey is running on this topic, aiming to get a better view on opportunities and challenges.

(c) A science-policy platform that would help to translate the research findings on the Environment-Microbiome-Health axis into policy making, with a view to make healthy ecosystems a cost-effective disease prevention healthcare strategy.

BRUSSELS WORKSHOP PROGRAMME

Thursday 6 October 2016		
8:00 – 9:00	Registration and posters placing	
9.00 – 10:15	Opening: Aline Van der Werf (Belgian Science Policy Office)	
	Plenary: Introductory presentations	
	Chair: Thierry Van den Berg	
	a. Cristina Romanelli (CBD): Biodiversity and Human Health: Context and opportunities for cross-sectoral collaboration	
	b. Richard Kock (UCL, London - NEOH): Emerging diseases and the environment - can't see the wood for the trees ?	
	c. Serge Morand (University of Montpellier): Biodiversity and Health	
	d. Birgit Van Tongelen, EU-DG Research & Innovation: Fighting Infectious Diseases and Advancing Public Health - Emerging epidemics	
	Moderated panel + audience discussion	
10:15 – 10.45	Coffee break	
10:45 – 12:15	Parallel sessions part 1	A. Vectors and vector borne diseases
		B. Zoonotic diseases
		C. Cross-pollinating agro-eco-human health perspectives
		D. Environmental and internal microbiome
		E. Nature health benefits
12:15 – 13:15	Lunch + coffee	
13:15 – 14:45	Parallel sessions part 2	A. Vectors and vector borne diseases
		B. Zoonotic diseases
		C. Cross-pollinating agro-eco-human health perspectives
		D. Environmental and internal microbiome
		E. Nature health benefits
14:45 – 15.15	Coffee break	
15.15 – 16:30	Plenary: Reporting on parallel sessions + Discussion Chair: Marius Gilbert	
16.30 – 18.30	Plenary: Experiences on OneHealth practice and integration challenges Part 1 Chair: Sue Welburn Strengthening synergies among disciplines and sectors & Challenging One Health	

	<p>stakeholders - Aurélie Binot (CIRAD)</p> <p>Network for Evaluation of One Health (NEOH) - Barbara Häsler, NEOH chair</p> <p>Workshop survey results - Hans Keune, Belgian Biodiversity Platform</p>	
18:30– 19:00	Posters	
19.00 – 21:30	<p>Walking dinner at the conference venue</p> <p>Speech of Christiaan Decoster, Chairman of the Direction Committee of the Belgian Federal Public Service Health, Food Chain Safety and Environment “</p>	
Friday 7 October 2016		
9:00 - 9:30	Experiences on OneHealth practice and integration challenges - Part 2	
9:30 – 11:30	<p>Experiences on OneHealth practice and integration challenges</p> <p>Parallel sessions (coffee during the session)</p>	A. Evaluation and challenges/limitations of One Health
		B. Social science, transdisciplinarity and traditional knowledge systems session
		C. Education & capacity building
11.30 – 12.30	<p>Plenary: Reporting on parallel sessions + Discussion</p> <p>Chair: Cristina Romanelli (CBD)</p>	
12.30 – 13.00	<p>Synthesis + next steps</p> <p>Chair: Lucette Flandroy</p> <p>Commenting on the outcomes of the workshop (Ladislav Miko (EU-DG Sanco) & Sofie Vandewoestijne (EU-DG Research & Innovation))</p> <p>Closure</p>	
13.00 – 14.00	Lunch	
14.00 – 17.00	No formal program; room for side events, networking – Coffee available	

COUNTRIES WORKSHOP PARTICIPANTS


