



BELGIAN ONE HEALTH NETWORK

LESSONS LEARNT FROM COVID-19

RESULTS FROM A BELGIAN ONE HEALTH SURVEY

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INTRODUCTION

The on-going COVID-19 crisis is a stark reminder of the importance of the relationships between biodiversity and human health. The health of animals, ecosystems and humans are closely interlinked, and when one is out of balance, others follow suit. Fighting the health crisis is a top priority today, but to avoid new systemic shocks (of environmental, health or other nature), we need a broader vision and a long-term strategy that addresses socio-economic, environmental and health challenges together and can make the post-crisis society and economy more resilient, sustainable and fair. In the midst of crisis management many things are still unclear and learning by doing is saved for later.

Still, some lessons can be drawn. In the Summer of 2020, the Belgian One Health network (BEOH) conducted a survey within the One Health community. The questionnaire covered experiences with COVID19, lessons learnt from early warnings, and perspectives on the EU Green Deal. The information collected from the survey was collated and here we present some overall lessons from the COVID-19 crisis. There were 45 responses to the survey, from participants across a wide range of backgrounds (including One Health, Agriculture, Social Sciences etc). Most have been involved in COVID-19 work within the areas of science and policy. All participants know about the EU Green Deal, particularly the thematic areas of Biodiversity, Farm to Fork, Adaptation to climate change strategy, and Circular Economy Action Plan.

KEY LESSONS

- One Health (OH) approach requires a de-compartmentalization of different sectors. Including better collaboration between general practitioners, healthcare workers, veterinarians, microbiologists, epidemiologists, agriculture, environment, public health, education, risk assessors, risk managers etc.
- Increased mutual understanding and overcoming silos: there is lack of sufficient knowledge of the expertise, experience and practice of the other. BEOH would like to contribute in this respect.
- Improved connections between science and practice needs, e.g. on the importance of adequate attention for infectious diseases in general practice. BEOH recommends and aims to contribute to clearer pathways for the scientific community to feed and contribute to the short- and long-term operational response.
- Conceiving and implementing practical protocols for inter-sector collaboration, with practical guidelines for handling epidemics.
- An integrated OH perspective on both nature related human health risks and nature related human health benefits. In addition, the importance of incorporating structural human drivers of OH dynamics in such approach.
- Develop an OH perspective on the EU Green Deal, in order to connect the above key messages to on-going governance initiatives in the EU, bringing together many aspects, challenges and sectors relevant to OH

GENERAL PROFILE OF SURVEY PARTICIPANTS

(n = 45)

57% of participants have a background in **Biology**



Biology



Agriculture



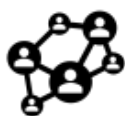
Wide range of educational backgrounds



Conservation



One Health



Social Sciences



EDUCATIONAL BACKGROUND

GEOGRAPHICAL AREA OF EXPERTISE

65% Working in Belgium



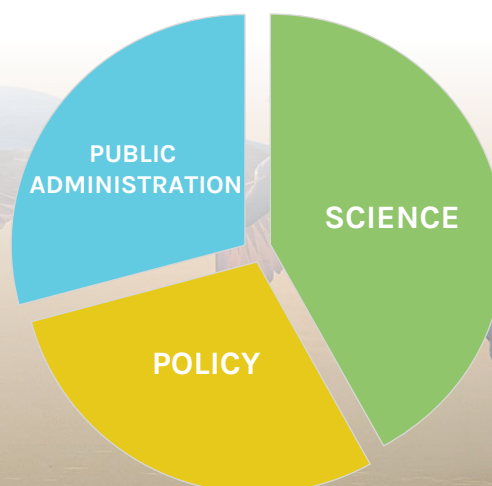
62% Working in Europe



31% Working Worldwide

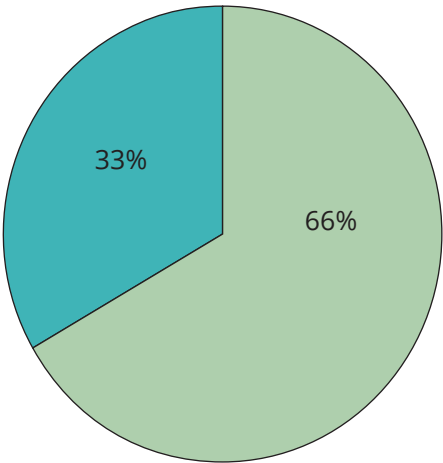
PROFESSIONAL BACKGROUND

42% of participants have a **Scientific** background



PARTICIPANT INVOLVEMENT IN COVID19 RELATED WORK

(n = 45)



INVOLVEMENT IN COVID19 WORK

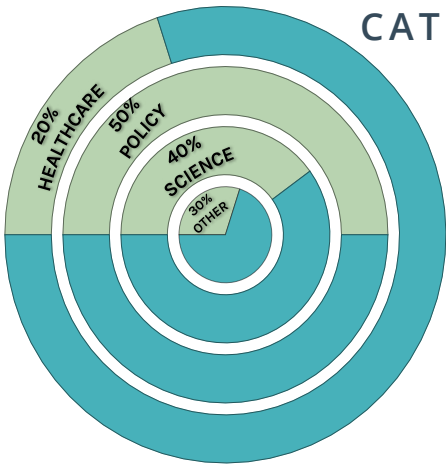


CATEGORIES OF COVID19 RELATED WORK

Respondents are working on COVID19 in the following areas:

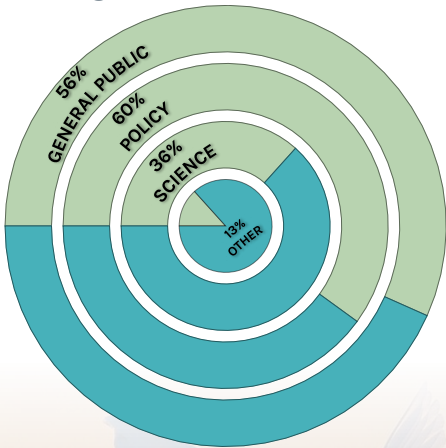
- General Public
- Policy
- Science
- Other

50% of Respondents are working in **Policy**



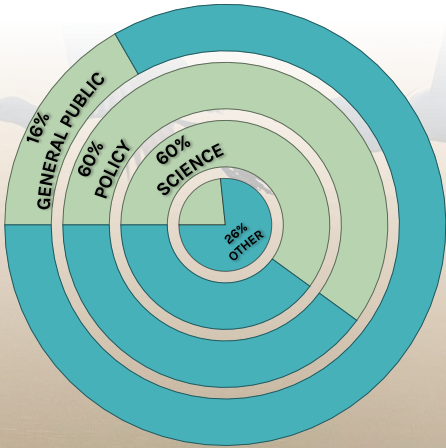
MAIN TARGET GROUPS FOR COVID19 RELATED WORK

60% of Respondents target groups that are working in **Policy**

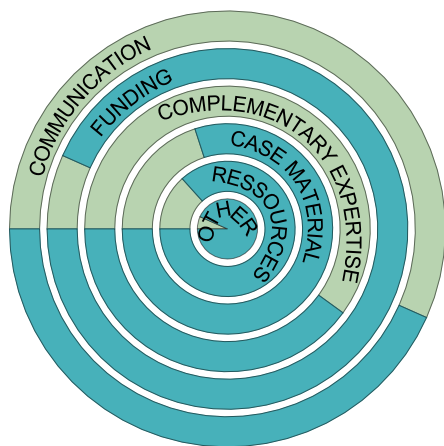


MAIN TYPES OF COLLABORATIVE PARTNERS

Collaborators are primarily working in **Policy and Science**

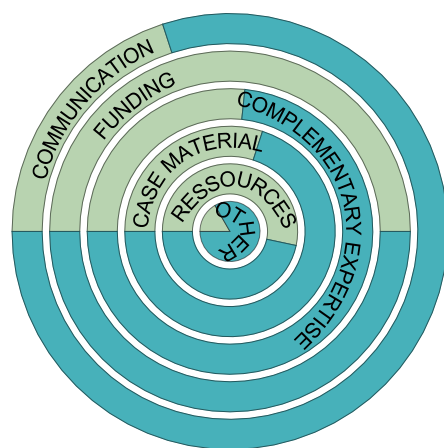


ASPECTS OF COVID19 RELATED WORK



SATISFACTORY ASPECTS IN COVID19 WORK

Most respondents are satisfied with **communication** and **availability of complimentary expertise**.



CHALLENGES IN ASPECTS OF COVID19 WORK

Respondents find **Availability of case material** and **funding** the most challenging aspects of their work in COVID19

IMPROVEMENTS IN ASPECTS OF COVID19 WORK

Respondents would like to see improvements primarily in **communication, funding and Availability of case material**



LESSONS FROM THE COVID CRISIS

IT IS TIME TO DRAW LESSONS

We are in the midst of crisis management and many things are still not clear or learning by doing: evaluating the crisis management as such is for later. Still, some lessons can be drawn, e.g. regarding the lack of anticipation and communication challenges. The Belgian One Health network (BEOH) consulted its members and invited others to contribute to a survey. Here we present first lessons from the COVID-19 crisis.

NEED FOR BETTER INTER- AND TRANSDISCIPLINARY COLLABORATIVE ARRANGEMENTS

Collaboration and coordination are key OH challenges. For the sake of better preparedness, prevention and efficiency, lessons need to be drawn. BEOH underlines the importance of inter- and transdisciplinary collaboration. The OH approach requires a de-compartmentalization of sectors (human, animal, environment): better collaboration between e.g. general practitioners, healthcare workers, veterinarians, microbiologists, epidemiologists, agriculture, environment and biodiversity conservation, public health, education, risk assessors, risk managers, ... Whether this is best organized by new adequate collaborative structures or by ad hoc merging of teams (in science, policy, practice) for more efficiency, is open for discussion. Anyhow, this requires sufficient and ambitious resources.

Opportunities for achieving better collaboration among relevant partners are in the current momentum: the spirit for cross-sector collaboration is still present because of the crisis, we can take advantage of it before 'business as usual' has returned. BEOH notices increased awareness, among experts, the general public and politicians, about the failures of our system and more openness for change. The EU Green Deal and its different strategies offer an opportunity to allow discussions and exchanges among different sectors which often work too much in silos. Such connections between different fields can help address the complexity of EU Green Deal challenges.

Structural barriers for collaboration remain: lack of mutual understanding regarding expertise of others, we all still very much work in silos, within too rigid structures. Also attitudinal barriers remain, such as lack of openness towards collaboration or fear not to be rewarded. This e.g. shows in lack of willingness to share data/information, e.g. because of publication strategies. BEOH aims to facilitate and support open data and open data & science where practically feasible for research groups and projects. Organizing collaboration in times of crisis is difficult without collaborative operating procedures developed in 'peace time'. Lack of sufficient budget / resources for collaboration work also remains a strong barrier. BEOH supports development of adequate structures during peace time, such as a general legislation or regulation framework "ready to use" / practical protocols for cross-sector collaboration and with guidelines if a similar disease appears again. Complex policy structures within the EU and between countries should be avoided.

The current confinement measures pose acute barriers for collaboration, such as cancellation of conferences & trainings, meetings postponed, the challenges of establishing new collaborations without real-life first encounters.

LESSONS FROM THE COVID CRISIS

THE IMPORTANCE OF AWARENESS RAISING

General awareness raising about the relevance of expertise such as epidemiology and psychology is needed, e.g. through education, communication and training. BEOH also sees a need to put the COVID-19 pandemic in context compared to other risks and drivers (conditions that are at the basis of new threats), such as climate change, trade and travel. The current COVID-19 pandemic and insights about related system challenges, offer opportunities to raise awareness about the importance of health care prevention measures and related life style changes. Looking forward, it will also be interesting to assess what remains in the awareness of the general public, once the crisis is less prominent.

GOVERNANCE CHALLENGES

Well-coordinated multi-level governance at local, regional, national, EU, global level remains a prominent crisis management challenge. Current governance structures in Belgium and Europe clearly showed deficiencies in adequate crisis management, e.g. a general lack of preparedness and lack of EU coordination (in part due to lacking efficient legislation or regulation) and competencies. Collaboration & coordination between governmental departments should improve. This also demands political will. The existence of several national action plans which are currently under preparation in order to implement these concrete actions, offers opportunities: such as the National Environment and Health Action Plan.

A better balance between relevant governance issues is needed, including social issues. BEOH underlines the importance of preparedness with a broader supportive basis: involving a diversity of expertise, stakes, governance levels, in order to develop shared risk assessments and perceptions. It is important to promote and support good practices at all levels and in all sectors, such as efficient detection and alert systems, data quality and sharing, methodologies for intervention, local production capacity for health related material, e.g. with enabling legislation or regulation. Towards the future, preparedness should also be improved with practical protocols with guidelines for similar epidemics, a “ready to use” general legislation or regulation framework, a common transversal approach, better organization of medical care and better concerted governance.

Despite deficiencies in crisis management, as a country Belgium initially showed the capacity to respond quickly to the COVID-19 crisis: could this be a lesson for other major environmental and health crises, like climate change? The sense of emergency can provide momentum to review the Belgian decisional pathways. BEOH sees opportunities in building on existing legislation or regulation, on the global (e.g. the Convention on Biological Diversity), EU and regional level. Yet BEOH is also quite aware of the challenges of multi-level governance, and the fact that ambitious action plans take time, and fine-tuning between different levels or across borders, is not straightforward in the EU context.

LESSONS FROM THE COVID CRISIS

SCIENCE / CAPACITY BUILDING

Enhanced scientific capacity is needed in all sectors: animal health, public health, food safety, environment, etc. E.g. more epidemiological experts in animal, public and environmental health are needed, and more training. BEOH underlines the importance of more interdisciplinary research, capacity building, integration and coordination. This warrants increased mutual understanding and overcoming silos: there is lack of sufficient knowledge of the expertise of the others. We need open science: sharing instead of competing on crucial knowledge.

The connection between science and policy is problematic: the science - policy - interface was already struggling in the beginning of the COVID-19 crisis, when early warnings from scientists were not taken seriously. The connection between science and practice also needs improvement, e.g. on the importance of adequate attention for infectious diseases in general practice. BEOH recommends clearer pathways for the scientific community to feed and contribute to the short- and long-term operational response, including research policy. Also, in the communication of experts, it seems (also psychologically) not always easy to convey messages based on limited knowledge due to complexity.

ENGAGEMENT & COMMUNICATION

Communication challenges from the COVID-19 crisis are diverse. How to reach specific target groups such as vulnerable groups? How to better involve citizens and societal organizations? How to improve communication between countries? How to better balance quality and timing in communication about scientific findings: e.g. slowness because of the duration of scientific validation processes. How to improve accurateness in communication about statistical findings? How to better combine accurateness with clear communication? How to explain to the general public the importance of biodiversity? How to increase the critical character of the media? How to better listen to each other: if people are worried about something, it merits our attention. BEOH recommends more involvement of social scientists in OH approaches: social scientists have the tools to listen and understand people's perceptions about such complex and unprecedented life(-changing?) experience.



(RE-)EMERGING INFECTIOUS DISEASE APPROACH

EID PREPAREDNESS

Building on the lessons learned in the COVID-19 crisis, we need to be better prepared for next pandemics, which will surely come. Microbes resistant to antimicrobials (antibiotics but also antifungal for example) are already widespread in Belgium and worldwide, and can also be transferred from animals to humans and vice-versa, and also travel the world. The cost of unpreparedness is too high, leading to draconic measures like Europe-wide lockdowns. This also means that warnings from experts (virologists, epidemiologists and other laboratory scientists) need to be taken more seriously at an early stage. Each disease is different (transmission, spectrum of susceptibility, epidemiology, ...) and therefore the management must be prepared and adaptive.

BEOH urges the importance of overcoming too narrow (silo) approaches, such as a purely clinical/medical approach to infectious diseases. Europe was ill-prepared: BEOH underlines the need for an EU rapid response emergency plan. We can enhance preparation with scenarios defined in advance and better informed staff regarding (new) crisis management. Belgium and its neighbouring countries need better action plans with local implementation targeted at early containment.

BEOH advises to establish interdisciplinary risk assessment groups based on transparency and independence during peacetime (the model of the Scientific Committee instituted by AFSCA-FAVV could be a model as well as the RAG), also at EU-level. We need to ensure that each country has enough production in its own country of pandemics related material (e.g. masks, ventilators, protective clothing, disinfection alcohol, etc.). The organization of primary care needs to be better prepared to such crisis, as does the capacity in nursing homes. We need more focus on screening and advices for companies in dealing with infectious disease risks.

EID EARLY WARNING, MONITORING, CONTROL, PREVENTION AND DRIVERS

We need to strengthen European early warning systems in support of more targeted and rapid responses. This entails a combination of monitoring and research. We need to implement surveillance and biosecurity measures in animals (wild, domestic and production animal). We need to restrict unsafe practices like wet markets, global travel, transgressing into pristine habitats,.... We need to incorporate preventative health in planning of local governments.

We need to develop better/broader understanding of the consequences of human-environment interactions in Europe and around the world. We need to invest in interdisciplinary, cross-border and cross-sector approaches: a diversity of scientific disciplines can be instrumental to pandemic prevention and mitigation. We need dedicated calls for tender for pathogen monitoring at Belgian and European levels.

We see several key drivers for EID:

1. **Overpopulation:** the ever-growing human population on this planet, which decreases ecosystems for animals and increases disease transmission risk.
2. **Global travel and trade.**
3. **Excessive consumption:** resulting in environmental degradation which is a defining factor for facilitating zoonotic transmissions and worsening the effects. Barriers for overcoming these challenges, are largely structural in character, e.g. embedded in policy practices and the practices of multinational companies

(RE-)EMERGING INFECTIOUS DISEASE APPROACH

ONE HEALTH/ECOHEALTH

Systemic health challenges, like COVID-19, need a systemic approach, such as One Health. This requires an integrated perspective, overcoming barriers between disciplines, sectors, and topical foci (de-compartmentalization). We need to find conceptual links with other scientific disciplines that can be instrumental to pandemic prevention and mitigation. It also requires an One Health funding framework, in order to provide sufficient resources.

The current crisis clearly showed some systemic weaknesses, and may offer momentum for change. There is increased attention for diseases originating in wildlife and the role of biodiversity loss herein. This crisis should support the development of the One Health Action Plan against antimicrobial resistance. There is also an increased interest in an One Health approach (even if often rather superficial/uninformed). In order to further support and develop One Health capacity, One Health networks, curricula and workforce are crucial.

The One Health challenge entails dealing with complexity, which is not an easy message to convey. BEOH can help clarify what the One Health concept can mean in policy and practice. In relation to the EU Green Deal, One Health can take advantage of the systemic and inclusive turn to change of the EU Green Deal, as it is a systemic concept, linking key societal domains



IMPORTANT ONE HEALTH SECTORS & DOMAINS

IMPORTANCE OF NATURE IN THE LIVING ENVIRONMENT

The role of nature in the living environment of humans has gained attention during the COVID-19 crisis, in several respects. On the one hand in terms of respect for nature as such: the intrinsic value of biodiversity and of healthy ecosystems. Environmental degradation, e.g. driven by excessive consumption and overpopulation, has led to biodiversity loss and habitat loss for wildlife, all contributing to infectious disease emergence. We could contribute to global nature restoration applying sustainability criteria for imported products (EU level and globally). We need to re-localise our economies, in particular our food system. We need to change our diets: less animal and more plant protein.

On the other hand in appreciation of nature during lockdown as green space for outdoor health promotion. When everything else becomes impossible, nearby neighbourhood nature becomes a vital need, also for mental health. Green space can support deep psychological and societal change processes, in which people feel connected again to nature. For these reasons, BEOH recommends improved availability of green in the city, integration of nature in daily work/school life, enhancing green space in work/school environments. In addition, we still need to invest in a proper narrative on nature & health linkages and more detailed evidence of nature based health benefits which warrants the need for further quantitative and qualitative research.

The combined focus on lowering risks of emerging infectious diseases and availability of green space for human health promotion, can benefit a preventative turn in health care. BEOH can support informing family doctors about the health effects of a green environment

FOOD SYSTEM

The role of the food system also has gained attention during the COVID-19 crisis, in several respects. On the one hand as important driver of environmental degradation in relation to excessive consumption. Awareness and understanding of the fragility, risks and impacts of current food systems on natural resources and human well-being is increasing. We need to re-localise our economies, in particular our food system. We need to change our diets: e.g. less animal and more plant protein.

On the other hand in relation to consumption of bush meat (reservoir animals), and the need to forbid the wet markets. Moreover, this does not mean that transmission risk is limited to food chain related diseases only, but also includes companion animals and other zoonotic diseases.

A fine balance is recommended between on the one hand the benefits of mainstream agriculture in terms of food safety and sufficiency at affordable prices, as well as the stakes of farmers. And on the other, the pressure agriculture and livestock production put on the environment. A barrier is posed by the role of global market prices, greed of the food processing sector, misinformation of consumers, lack of pragmatism in environmental protection.

The importance of an One health perspective on the food sector is also relevant for the Farm-to-Fork strategy of the EU Green Deal. EU land-use policies aiming at transforming farm land - which are "biodiversity desert" - into functional ecosystem corridors is recommended.

IMPORTANT ONE HEALTH SECTORS & DOMAINS

HEALTH

Mental health damage was severe during the crisis which was perhaps underestimated at the beginning, as was the complexity of it, especially regarding vulnerable people. The existence of health threats is not an exceptional event; we need to use this event to examine what worked and what did not. If we do not take the lessons of the crisis, we run the risk that we move too quickly to other problems or aspects of the crisis (socio-economic aspects instead of health aspects). For the EU Green Deal, a One Health perspective should aim to clarify in understandable form how this Green Deal can contribute to the health of Belgians.

GENDER

BEOH underlines the importance of the gender perspective, the importance of which as e.g. highlighted under lockdown conditions where violence against women increased. Also the importance of (formal and informal) care, and the crucial role of women, became more apparent during the crisis. This should also be recognized in terms of economic resource distribution. A challenge is not only to create more interest for and knowledge about the gender perspective, but also to raise awareness that gender equality is still not achieved throughout society. Involving gender experts in general, could help overcome this.

RESOURCES

FUNDING, MEANS

Availability of sufficient financial and other resources remains a challenge, especially funding schemes which supporting sufficient collaboration and integration. In the health care sector, e.g. the payment system for general practitioners on individual patient basis, could benefit from evolving to a lump sum payment. In general, there is a lack of sufficient material and human resources in crucial sectors. Investment priorities could shift more towards health care and local production, as well as nature conservation and education. More general, alignment with climate change challenges and the EU Green Deal, would be recommendable.

Current investment practices then have to put less focus on a purely economic rationale, and focus more on other rationales for society at large, including more attention for vulnerable groups, support for small scale local initiatives and also for wildlife disease. A challenge with such different rationale than the economic rationale is that hard economic data in support of alternative investment goals, are often less easily available, or, less convincing to decision makers.

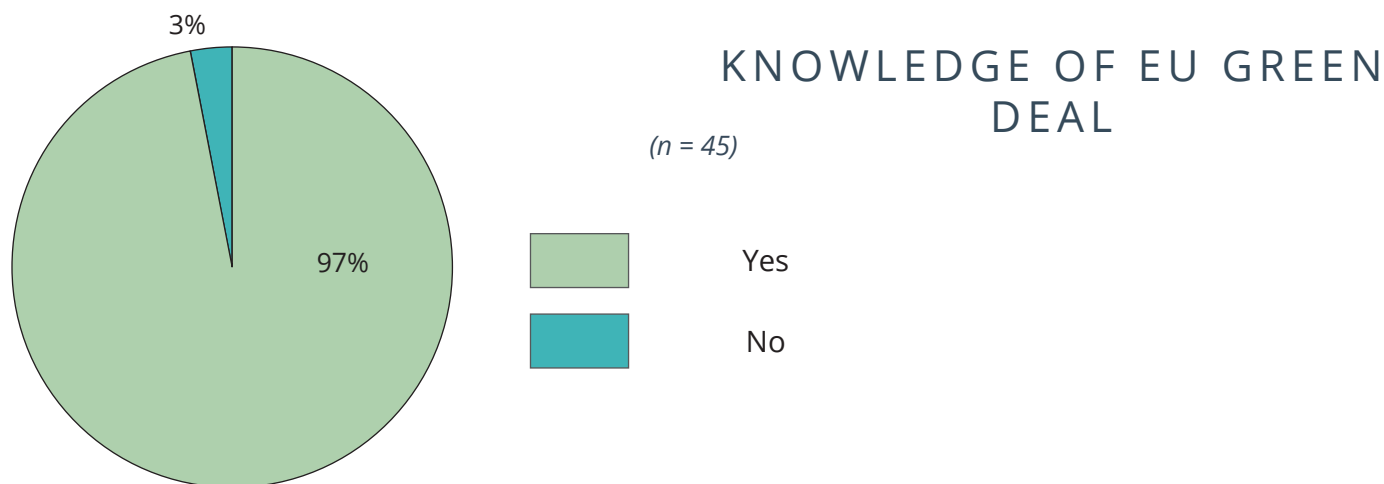
Adequate scientific knowledge needs adequate resources, which does not seem the case for One Health related research, both nationally and internationally. The current interest in One Health, e.g. in policy, could bring new opportunities, but appreciation of interdisciplinary and transdisciplinary research still is a challenge to current funding frameworks, and science at large. A One Health funding framework could also be supportive in allocation of funding, both in science, policy and practice. Also, the EU Green Deal and its accompanying research & innovation strategy could provide opportunities in this respect.

DAILY LIFE & WORK

Potential longer term changes regarding daily life and work can be expected. Regarding work, more teleworking, work at home, virtual meetings, and less traveling can be expected. This needs adaptation to the working environment, like adapted office buildings (end of landscape offices?), but also other perspectives on efficiency and social aspects of work. Guidelines for pandemic proof buildings and public facilities need to be developed.

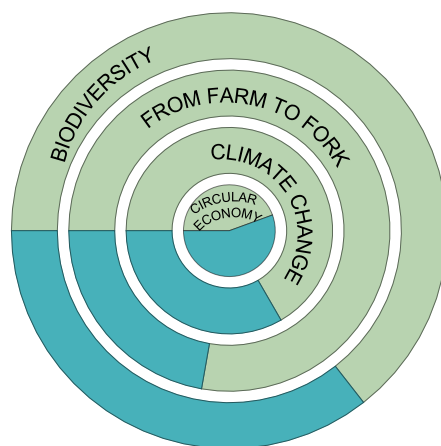
In daily life the attitude towards infection risk will change: how we perceive sneezing and coughing will change, how we take care of personal hygiene too. This may be an opportunity also for other health issues, such as the spread of all micro-organisms between humans in general, and actions on other environmental issues such as endocrine disruptors.

BELGIAN ONE HEALTH IN THE CONTEXT OF EU GREEN DEAL



AWARENESS OF GREEN DEAL THEMATIC AREAS

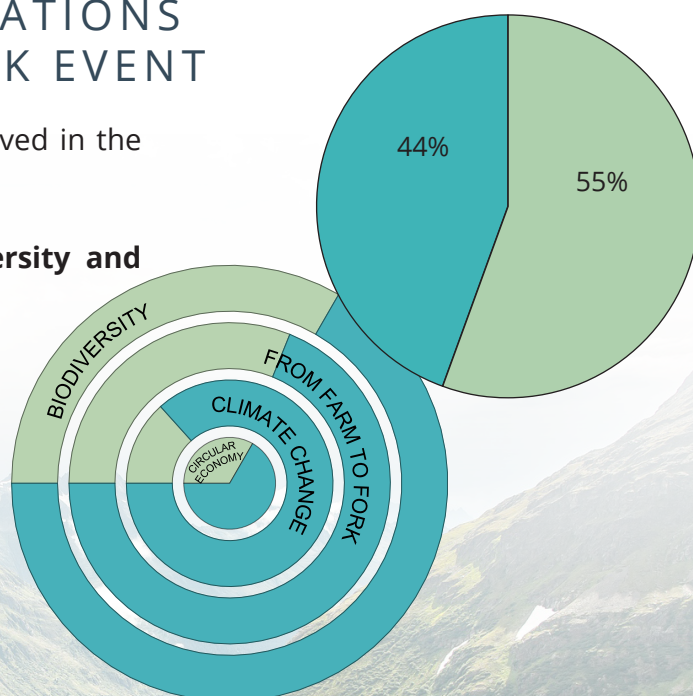
Respondents find **Availability of case material** and **funding** the most challenging aspects of their work in COVID19



INVOLVEMENT IN PREPARATIONS FOR ONE HEALTH NETWORK EVENT

Over half of participants would like to be involved in the preparation for the One Health Network Event.

Most are interested in the themes Biodiversity and Farm to Fork



RECOMMENDED READING

The following are selected international references to COVID19 and One Health related work

1. [Connecting Global Priorities: Biodiversity and Human Health. A state of Knowledge review](#)
2. [CBD/SBSTTA/21/9 Guidance on integrating biodiversity considerations into one health approaches](#)
3. [Biodiversity and Infectious Diseases. Questions and answers](#)
4. [Implementation of the Nagoya Protocol in the context of human and animal health, and food safety: Questions and answers](#)
5. [Preventing the Next Pandemic: Zoonotic diseases and how to break the chain of transmission](#)
6. [The fifth edition of the Global Biodiversity Outlook](#)
7. [Report of the Workshop on Biodiversity and Pandemics IPBES \(2020\)](#)
8. [The COVID-19 challenge: Zoonotic diseases and wildlife](#)
9. [Biodiversity and the Economic Response to COVID-19: Ensuring a green and resilient recovery](#)
10. [Ensuring a Post-COVID Economic Agenda Tackles Global Biodiversity Loss](#)
11. [Urgent needs for Global Wildlife Health](#)
12. [COVID-19 Response and Recovery: Nature-Based Solutions for People, Planet and Prosperity](#)
13. [How biodiversity-friendly trade can support COVID-19 recovery](#)
14. [COVIPENDIUM: information available to support the development of medical countermeasures and interventions against COVID-19](#)
15. [COVID19-TAF - Communities Taking Action](#)
16. [Integrating Biodiversity Infrastructure into Pathogen Discovery and Mitigation of Emerging Infectious Diseases](#)

CONCLUSION

The lessons in this report are to an extent old messages but are still very important, and perhaps timelier than ever. A lot of challenges are still unanswered, and some are on-going, but all demand the time of proper One Health practice. The 2020 survey has shown that the One Health community endeavours to have an approach that will de-compartmentalise sectors, increase mutual understanding and improve connections between science and practice needs. There are calls for conceiving and implementing practical protocols for inter-sectoral collaboration, with an integrated One Health perspective on both nature related human health risks and health benefits.

There is also a need to develop a One Health perspective on the EU Green Deal. The Belgian One Health Network is currently planning its 2021 event: 'Joining Belgian forces for a One Health Green Deal'. The objective of this event is to stimulate a greater cooperation among experts working in various fields, policy makers and civil society in order to develop and operationalize an One Health approach in support of the European Green deal.

In early 2021 the Belgian One Health Network intends to encapsulate the main lessons from this report in the form of a policy brief with the intention of bringing attention to key policy recommendations that tackle current and ongoing One Health challenges. In addition to these measures, the Belgian One Health Network continues to support, collaborate, and build capacity within the national and international One Health community.

