



**30 May 2024**

Expert workshop report

# **One Health governance in the European Union**

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- SAPEA (2024). *One Health governance in the European Union: Expert workshop report*. Berlin: SAPEA.
- DOI 10.5281/zenodo.14169225
- Downloadable from <https://scientificadvice.eu/advice/one-health-governance-in-the-european-union/>

## Version history

Version	Date	Summary of changes
1.0	15 November 2024	First published version

# **Scientific Advice Mechanism**

to the European Commission

## **One Health governance in the European Union**

30 May 2024

**Expert workshop report**

# Table of contents

<b>Summary</b>	<b>5</b>
<b>Introduction</b>	<b>6</b>
<b>Context and scope</b>	<b>7</b>
<b>Report of the workshop</b>	<b>8</b>
Welcome and introduction to SAPEA	8
Introduction to the SAM and Advisors, background to the request for science advice	8
Overview of the evidence review report	9
General remarks on the SAPEA evidence review report	9
One health definition in the EU context (Chapter 1 of the evidence review report)	12
EU policies benefiting from a One Health approach (Chapter 2 of the evidence review report)	14
Leverage points for building capacities, planning and implementing One Health policies (Chapter 3 of the evidence review report)	19
Criteria and indicators to assess effectiveness (Chapter 4 of the evidence review report)	23
Evidence-based options for policy and research gap (Chapter 5 of the evidence review report)	25
Summary of other feedback	27
Closing remarks	28
<b>Annex 1: References</b>	<b>30</b>
<b>Annex 2: List of attendees</b>	<b>31</b>
Invited experts	31
Members of the SAPEA working group	31
Members of the Group of Chief Scientific Advisors	32
Members of the SAM Unit	32
Members of SAPEA	32
<b>Annex 3: Programme</b>	<b>34</b>
<b>Annex 4: Acknowledgements</b>	<b>35</b>

# Summary

The expert workshop is a vital part of SAPEA's evidence review process. It provides a critique of the draft SAPEA evidence review report by the wider expert community.

The workshop on One Health was held on Thursday 30 May 2024 as an online meeting. Participants included the invited experts, members of the SAPEA working group, SAPEA representatives, the Group of Chief Scientific Advisors and staff of the European Commission.

The workshop format was as follows:

- After a general introduction to the evidence review report, a keynote speaker presented an overall assessment of the report, with initial observations on strengths, possible limitations and gaps.
- Each of the main chapters was then introduced, followed by feedback from invited discussants and an opportunity for open discussion.

The main suggestions for improvement to the draft report are summarised at the end of each section.

After the workshop, members of the working group considered the feedback and agreed on the actions that should be taken to address it. The draft evidence review report was then revised, prior to undergoing formal peer review. The final version has been published as a SAPEA evidence review report and is available [on the website of the Scientific Advice Mechanism](#).

# Introduction

SAPEA's expert workshop is a vital part of the evidence review process. It fulfils several purposes:

- providing a critique of the draft evidence review report by the wider expert community. Invited experts to the workshop give informal feedback, offering constructive input to the SAPEA working group producing the report
- bridging from the evidence review stage to finalising the policy recommendations of the Group of Chief Scientific Advisors, who provide a Scientific Opinion for the European Commission
- developing further the case studies, conclusions and evidence-based policy options in the evidence review report

Experts attend and give their views in a personal capacity and not as representatives of their employer or any other organisation with which they are associated. Chatham House rules are observed, with no attribution to any individual.<sup>1</sup>

A list of attendees is given in Annex 2 to this report.

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<sup>1</sup> More information at: [Chatham House Rule | Chatham House – International Affairs Think Tank](#)

# Context and scope

The Group of Chief Scientific Advisors provides independent scientific advice to the European Commission. The Advisors work closely with the SAPEA consortium, which conducts comprehensive reviews of the evidence.

The scoping paper<sup>2</sup> for One Health sets out the formal request for advice from the College of European Commissioners to the Group of Chief Scientific Advisors. The evidence review report by SAPEA synthesises the evidence, in response to the main questions from the scoping paper:

What forms of management and cross-sectoral collaborations are best suited to ensure that synergies, possible trade-offs, and unintended consequences are taken into account?

How should One Health be defined in the EU context and what are the synergies with and demarcations to other approaches such as 'sustainability', 'One Planet' and 'Healthy Planet'? Which EU policies could significantly benefit from the implementation One Health approach?

Which tools and leverage points for building capacities, planning and implementing One Health are most suitable for the EU level to maximise synergies, consistency and coherence of interventions and avoid duplication of efforts?

What are the criteria and the indicators that are most useful to assess the effectiveness of the tools and for monitoring the implementation of complex policies such as One Health? How can the progress in the EU policies which is due to the application of the One Health approach be measured?

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<sup>2</sup> [https://research-and-innovation.ec.europa.eu/system/files/2023-12/ec\\_rtd\\_sam-scoping-paper-one-health.pdf](https://research-and-innovation.ec.europa.eu/system/files/2023-12/ec_rtd_sam-scoping-paper-one-health.pdf)

# Report of the workshop

## Welcome and introduction to SAPEA

All participants were warmly welcomed. They included invited experts, members of the SAPEA working group, representatives of SAPEA, members of the Group of Chief Scientific Advisors and staff of the European Commission (see Annex 2). The role of SAPEA, the purpose of the expert workshop and basic ground rules were outlined.

## Introduction to the SAM and Advisors, background to the request for science advice

The model of the Scientific Advice Mechanism (SAM) was presented. The Group of Chief Scientific Advisors acts as the interface between the scientific community and the European Commission. The composition and role of the SAPEA network, which brings together over 120 academies from across Europe, was also briefly outlined, as were the complementary roles of the evidence review report and the Scientific Opinion. Previous work by SAM relating to One Health was briefly referenced, including reports on *Transforming the future of ageing* (SAPEA, 2019) and *Improving cancer screening in the EU* (SAPEA, 2022).

The context for the request for scientific advice on One Health governance was laid out, including the COVID pandemic and the rise of antimicrobial resistance, as well as a decision by DG-SANTE to establish a new directorate for One Health, working at the interface of plant, human and animal health. The One Health concept is currently informed by a definition<sup>3</sup> developed by OHHLEP.<sup>4</sup> Given the complexity of this policy area, the challenge for the European Commission is to identify cross-sectoral governance approaches that allow health, agriculture and research to work together, while accounting for synergies, trade-offs and unintended consequences.

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<sup>3</sup> "One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent." (OHHLEP, 2022)

<sup>4</sup> OHHLEP, the One Health High-Level Expert Panel, is the scientific and strategic advisory group to the Quadripartite organizations: Food and Agriculture Organization of the United Nations (FAO), United Nations Environment Programme (UNEP), World Health Organization (WHO) and World Organisation for Animal Health (WOAH). More information here: <https://www.who.int/groups/one-health-high-level-expert-panel>



# Overview of the evidence review report

The working group co-chairs provided an overview of the work so far, including the scoping questions and five chapter topics. Chapter 1 of the report aims to clarify elements of concepts in the OHHLEP definition, and to explore the ethical consequences of adopting it in the EU. Chapter 2 includes a literature review of EU policies benefiting from a One Health approach, and options to improve One Health governance. Chapter 3 has a literature review on benefit-cost ratios of One Health initiative, together with five case studies of successful One Health implementations at EU and national levels. Chapter 4 explores qualitative and quantitative indicators, and tools, for monitoring the benefits of One Health operationalisation. Chapter 5 provides short, mid and long-term evidence-based options for policies, along with research gaps and opportunities for capacity-building.

# General remarks on the SAPEA evidence review report

## Introduction

In this session, an invited keynote speaker presented an overall assessment of the report, with initial observations on strengths, possible limitations and gaps.

## Summary of the keynote presentation

The speaker praised the working group for having compiled so much evidence in a short time, before recapping the report's overarching aims. Overlaps with the work of *The Lancet* One Health Commission<sup>5</sup> were noted in this presentation (and elsewhere in the workshop).

It was helpful to start with a chapter which rereported to, and clarified, certain elements of the OHHLEP definition. The speaker agreed with the importance of noting the incremental benefit of a One Health approach, but advised that this needed to be defined in the report. The coverage of such aspects as collaboration, as well as sociocultural and economic considerations, was welcomed, as was the report's greater attention to ethics, social justice and legal issues. Equity, gender and youth appeared, however, to be neglected. Chapter 1 also explores the synergies and differences between different One Health concepts, such as EcoHealth and Planetary Health, but the speaker felt a voice from the Planetary Health research community was missing. It was noted that One Health has moved from a concept sitting at the interface of human, animal and environmental health to a more comprehensive approach of collaboration and interacting equitably, and yet (as noted above) 'equity'

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<sup>5</sup> [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)31027-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)31027-8/fulltext)

is a term missing from the report, albeit perhaps covered in discussions of ethics. The speaker agreed with the working group's recommendation that One Health definition be adjusted according to the audience to maximise effectiveness, as well as with the disentanglement of elements of the term 'environment' to include 'plants, microbes, soil, waterways, the atmosphere, manufactured materials and chemicals, and the climate'.

Chapter 2 serves as the rich core of the report, identifying EU policies that align with, and would benefit from, the One Health approach. The speaker briefly introduced OHHLEP and its Action Tracks, noting that the environment was now firmly integrated in health, although non-communicable diseases (NCDs), which are subject to growing EU attention are missing, both in the work of OHHLEP and the report. NCDs include cardiovascular and respiratory diseases, cancers, metabolic diseases such as diabetes, and especially brain health, which includes neurology, psychiatry, neurosurgery and neurodevelopment (more than 40% of the global population currently live with one or more neurological disorders; Steinmetz et al, 2024), amongst others. The speaker also felt more needed to be made of the opportunities for EU-level One Health collaboration with low- and middle-income countries. A crucially important finding of the evidence review was the 'game-changing' prospect of litigation on the basis of right to One Health, with an expanded jurisprudence having significant consequences for Member States and the EU at large. The speaker identified as potential EU One Health policy 'magic bullets' the fact that Europe is a centre of gravity for One Health partnerships and could act as a data repository and knowledge broker, devising an overarching framework for Member States to contextualise. The need for a training taskforce was undersold in the report and should be expanded upon.

In Chapter 3, the predominance of infectious diseases in the literature search was unsurprising, although it was pleasing that other health issues were covered (e.g. NCDs). The speaker concurred with the chapter authors that data on return-on-investment were lacking, and that the neglect of human capital in published studies likely explains the unexpectedly minimal benefits of integrated surveillance-response systems. The case studies were useful, with the attention to cities particularly commended given the continuing global shift from rural to urban living; the coverage of trichinellosis control as a historically significant example of pan-Europe cooperation was also commended. Case studies on Singapore's 'liveable city' initiative and non-communicable diseases might serve as useful additions.

The speaker felt the chapter on indicators (Chapter 4) to be rather short, although accepted this, given the current lack of evidence for indicators which function at both micro- and macro-levels. Highlighting progress on qualitative (e.g. 'One Health-ness' framework) and quantitative measures (e.g. linear and dynamic assessments, and game theory), the authors of the report conclude that "available indicators are already sufficient to follow up EU policies for their effectiveness in

operationalising One Health". However, in the speaker's opinion, this is debatable. A detailed theory of change is still needed upon which to base workable, more quantitative indicators.

### Response and discussion

The ensuing discussion returned to NCDs and their drivers, which have a significant burden on society yet are largely missing from the current One Health debate. The speaker offered afterwards to send on to the co-chairs some ideas for case studies with an NCD theme.

On the question of One Health litigation, the recent case was raised of Swiss senior women successfully suing their government for failing to take sufficient action to protect them from climate change-induced heatwaves.<sup>6</sup>

One participant, picking up on a slide in the keynote speaker's presentation, pointed for the need for balance when it came to articulating the health of microbes: we do not want all microbes (e.g. pathogens) 'to be healthy and happy' – only those which benefit us. There was further discussion of this dilemma in the Zoom chat (see 'Summary of other feedback').

### Summary of recommendations

The following to be considered:

- increased coverage of non-communicable diseases, especially brain health (definition see above)
- more attention on urban health
- greater coverage of equity, gender and youth issues
- an examination of the role of One Health care systems
- more emphasis on training, leadership, knowledge and literacy – perhaps delivered by a new EU-level One Health 'taskforce'
- more on collaborations with low- and middle-income countries
- propose options on what could be the EU's major contributions to advancing One Health governance, such as a coordinated mechanism, framework, database or observatory etc.

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<sup>6</sup> <https://www.euronews.com/green/2024/04/09/top-european-human-rights-court-could-rule-that-governments-have-to-protect-people-from-cl>

## One health definition in the EU context (Chapter 1 of the evidence review report)

### Introduction

Further work on a robust One Health definition is needed to drive theory, methods and results despite the existence of the OHHLEP definition. This is because One Health must be adapted to the prevailing social, cultural and spiritual context. Moreover, OHHLEP has yet to reflect fully on the consequences of seeking to balance and optimise the health of people, animals and ecosystems. Putting people, animals and ecosystems on an equal footing, and moving away from anthropocentrism – an ontological expansion – has unprecedented philosophical, ethical and legal implications. For instance, a radical interpretation might dictate that we no longer use animals, yet this would threaten the livelihoods of one billion livestock farmers worldwide. Chapter 1 has therefore sought input from anthropologists, philosophers and lawyers to disentangle these issues. The terms ‘balanced’ and ‘optimised’ can be mathematically addressed with appropriate indicators. The chapter also considers stewardship of health and the environment; despite healthcare being a common good, insufficient public resources may imply a growing role for private sector that will affect operationalisation of One Health. Finally, the value of transdisciplinarity in the One Health approach is emphasised, whereby practical transformational knowledge is co-produced between academics and non-academics (i.e. societal actors and authorities), as distinct from interdisciplinarity which entails collaboration between academic disciplines only.

### Summary of comments by the first discussant

The discussant was pleased to see the broadening understanding of One Health in the report, combining life sciences and social sciences perspectives, although cautioned against forgetting important points as the definition widens. Whether collaboration is always necessary for an approach to be considered ‘One Health’ is unclear from the report; for instance, does the term apply to a researcher focused solely on a specific issue (e.g. zoonotic virus or sustainable food production)? Although mentioned later in the report, this chapter should perhaps stress the current lack of institutions enabling interdependence.

The discussant was concerned that some of the language and terms used in the chapter may be unfamiliar to a ‘hardcore life scientist’. The distinction explored in the chapter between ‘environment’ and ‘ecosystem’ was welcome, as was the discussion of the differences between ‘transdisciplinarity’ and ‘interdisciplinarity’. Many life scientists still privilege quantitative data, leading to potential for

conflict with social scientists in the One Health approach, which draws upon a wider range of knowledges.

The discussant supported the report's call for more equal distribution of resources across the human, animal and environmental domains: funding and research interest indeed remains heavily weighted towards human health issues. As noted by the keynote speaker, more attention was needed in this chapter on planetary health.

Finally, while accepting that 'tacit and traditional knowledge' was needed, the statement that One Health must 'prioritise' it was surprising.

### Summary of comments by the second discussant

Before jumping straight into One Health, it might be worth briefly defining 'health' itself, and noting the need for a systems approach to manage the complexities. The discussant suggested mentioning that health is a human right, and also an 'asset' not a 'cost'.

The chapter is overly pessimistic in foregrounding the 'confusion' surrounding the One Health concept; progress over the last two decades, including the now broad recognition of the intertwined health of animals, humans and ecosystems, should be celebrated. The clarification of 'ecosystem' and 'environment' – a perennial source of tension and confusion between public health and veterinary science – is a major contribution of the report.

While post- and trans-humanist literature is referenced, other traditional knowledge systems, cosmologies and ways of seeing and knowing are absent: these areas must be enhanced should the report be shared beyond the EU, especially with partners in the Global South. The concept of 'Two-Eyed Seeing' could, for instance, be included.

The discussant agreed that full ontological and epistemological rigour is not always possible and that more pragmatic approaches may in the end be needed, yet felt the writing nevertheless gave insufficient 'leeway' to those who had strived to embrace a more holistic approach but were ultimately forced into pragmatism.

The discussion on 'interdependence' and 'interconnection' was a strength, although whether these are mutually exclusive terms, or whether a dynamic gradient exists between the two, was uncertain. The central challenge of moving from anthropocentrism to more holistic approaches should also be more clearly articulated, so too the imperative of obtaining *a priori* informed consent when collaborating with indigenous practitioners and communities.

There is a general need to improve readability and remove redundancy in the text. Certain phrases in this chapter require more rigour or precision, including: the 'proper functioning of the ecosystem', 'capitalist growth' and 'large-scale problems of (inter)cultural change'.

In closing, the discussant suggested that 'fungi' be included in the expanded One Health definition, called for a greater emphasis on intergenerational aspects, and advised that One Health strategies in the Global South (e.g. in Rwanda, Liberia, Zambia) be recognised (even if they are yet to be implemented).

### Response and discussion

A chapter author, responding to the second discussant's suggestion that 'health' itself needed to be properly defined, argued that the multitude of definitions risked an academic discussion which could divert focus from the aim of the report. It was however conceded that the approaches currently mentioned might appear overly 'Western' in the report, even if not the intention, and this would be rectified. The philosophical question of whether a gradient exists between interdependence and interconnectedness could also be explored, so too the intergenerational aspects of One Health.

### Summary of recommendations

The following to be considered:

- more attention to planetary health
- greater emphasis on non-Western, traditional knowledge systems
- coverage of intergenerational aspects of One Health
- other suggestions for improvement on specific sections (see above)

## **EU policies benefiting from a One Health approach (Chapter 2 of the evidence review report)**

### Introduction

This chapter aims are to: clarify, through a review of literature, One Health institutions and map stakeholders at different scales; describe different legislation, policies and action plans (a detailed table of institutions and policies being included in the report's appendices); and assess the 'One Health-ness' of specific policies and action plans. The chapter also includes an analysis of strengths, weaknesses, opportunities and threats of transdisciplinary working, and considers which EU policies

could benefit most from a One Health approach. An organigram summarises relationships between institutions, although a more in-depth methodology, involving interviews, is probably required for a greater understanding of tacit connections.

Key emerging messages are the importance of coordination, and the need for strong leadership and financial will, with those countries already employing multisectoral approaches better placed to tackle One Health challenges. The creation of One Health knowledge brokering agencies may improve transboundary collaboration. A schematic indicates EU policies closely aligning with key characteristics in the OHLEPP One Health definition, while identifying others (e.g. Farm to Fork, Crisis Preparedness legislation, EU Biodiversity Strategy) that could benefit from a greater One Health approach. For some more 'issue-based' policies however a One Health framing may be unnecessary or inappropriate. As noted by the keynote speaker, litigation on the basis of a right to One Health may be a 'game-changer'.

Future opportunities to explore include repositories of One Health networks, context-specific approaches, an overarching harmonising conceptual framework, training and formal monitoring systems. A revision is proposed to a statement in the chapter on a possible forthcoming pandemic treaty.

### Summary of comments by the first discussant

The discussant was excited to see clear alignment between the report and reports from the *Lancet* One Health Commission. As noted in the chapter, the influence of individual thought-leaders on the One Health approach needs to be appreciated.

The importance was raised of invoking 'wellbeing', not only 'health', when seeking to leverage additional policy support for One Health initiatives. The phrase 'One Health' is absent in the UN SDGs (Sustainable Development Goals), the 2019 work on accelerators<sup>7</sup> for achieving the Global Action Plan for Healthy Lives and Well-being for All (the GAP),<sup>8</sup> the 2023 study by the UN DESA<sup>9</sup> on SDG accelerators (DESA, 2023) and a 2024 progress report from WHO on the GAP process (WHO, 2024). The report presents an opportunity to rectify these 'gross omissions' and explore linking the accelerators to One Health; in the later discussion, the speaker suggested that it may not be too late to propose the One Health Approach as an additional accelerator in the GAP process.

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<sup>7</sup> <https://www.who.int/initiatives/sdg3-global-action-plan/accelerator-discussion-frames>

<sup>8</sup> <https://www.who.int/initiatives/sdg3-global-action-plan>

<sup>9</sup> United Nations Department of Economic and Social Affairs

A possible, albeit sensitive, solution to the challenge highlighted in the chapter of engaging 'rural and indigenous' communities, may be to include religious stakeholders, given trends across the EU (e.g. a predicted rise in the Muslim population). The presentation of the European policy landscape was commended; the singling out of DG SANTE as largely responsible for delivering the One Health agenda makes the case for greater funding for this Directorate. The acknowledgement of Europe's global influence in the One Health space is also welcomed.

The chapter could more strongly highlight the current skew towards infectious diseases, and inadequate attention on environment and ecosystem health, which may hinder efforts to implement the One Health approach.

The discussant recommended that the lack of a robust theory of change should also be emphasised. To increase the influence of the One Health approach on EU policy, the following 'axes' or 'leverage points' could be mentioned: the role of environmental factors on infectious disease outbreaks, the indispensability of One Health in surveillance and response, AMR, and the inclusion of One Health approaches as a requirement in relevant EU grant applications.

Like other workshop participants, the discussant was excited by the possibility of One Health litigation but cautioned that proper attention was needed to balancing the rights of human, animal and non-sentient beings. It was noted that while superficially aligned with the One Health definition, the chapter should recognise that such EU policies as Farm to Fork were inherently anthropocentric by invariably focussing the endpoint of sustainable food systems on the plates of humans.

The role of the EU in the pandemic treaty negotiations could also be more clearly articulated.

The discussant welcomed the chapter's suggestion that a One Health knowledge brokering agency be created, but was unclear as to how that might be achieved and how the necessary training would be delivered. On One Health financing, the primary role of public funding needed to be stressed. The speaker was surprised by the brief coverage of private financing, and the overly negative treatment of not-for-profit funding, but recognised the blurred line between the two, suggesting that all non-public funding perhaps be discussed in a single section as having several shared potential risks/benefits.

### Summary of comments by the second discussant

The second discussant agreed with the statement that the 'EU Biodiversity Strategy, amongst others, could benefit from a greater emphasis on a One Health approach', noting that the reverse was also true: i.e. One Health could benefit from more emphasis on biodiversity (e.g. better protecting nature



reduces the risk of zoonoses). However, the role of biological invasions<sup>10</sup> in driving ecosystem changes (e.g. biodiversity loss) and in infectious disease outbreaks (including COVID) is currently neglected in the report. Invasive alien species can impact as pathogens themselves, or can introduce or act as hosts. Parallels between invasive alien species and pathogens should be drawn, in terms of how they spread and in the tools for mitigating their threat (e.g. in restoring ecosystems). This links to the concept of 'landscape immunity', whereby human, wildlife and ecosystem services are preserved and promoted. The discussant pointed out how managing biological invasions may help addressing the threat by pathogens. The discussant also referenced a recent paper in *Nature* indicating that addressing global change drivers, including biodiversity protection, invasive alien species control and climate change mitigation (Mahon et al, 2024), may be a cost-effective approach for infectious disease management - and thus relates to the discussion about financing One Health.

The call by the keynote speaker for greater emphasis on planetary health was reiterated; while the EU Biodiversity Strategy is included in the analysis, linkages need to be more explicitly addressed between One Health and a variety of other EU policies and legislation mainly emanating from DG ENV, such as the Birds Directive<sup>11</sup> and Habitats Directive<sup>12</sup>, Wildlife Trade Regulations<sup>13</sup>, Aquaculture policy<sup>14</sup>, Water Framework Directive<sup>15</sup> and the Invasive Alien Species Regulation.<sup>16</sup> The discussant noted that although infectious diseases are excluded in the latter instrument, the risk posed to human and wildlife health is one of the factors in determining whether or not an invasive alien species qualifies for being regulated; moreover, the European Alien Species Information Network (EASIN),<sup>17</sup> a catalogue maintained by the EU Joint Research Centre, includes alien bacteria and viruses.

The chapter mentions the EU Animal Health Law<sup>18</sup> but should also consider the EU plant health legislation<sup>19</sup>, since this also benefits environmental systems, human and wildlife health. While plants are included in the report's expansion of the OHHLEP definition, a more specific emphasis should be placed on this component.

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<sup>10</sup> "The term "biological invasion" is used to describe the process involving the intentional or unintentional transport or movement of a species outside its natural range by human activities and its introduction to new regions, where it may become established and spread." (Roy et al, 2024)

<sup>11</sup> [https://environment.ec.europa.eu/topics/nature-and-biodiversity/birds-directive\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/birds-directive_en)

<sup>12</sup> [https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive_en)

<sup>13</sup> [https://environment.ec.europa.eu/topics/nature-and-biodiversity/wildlife-trade\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/wildlife-trade_en)

<sup>14</sup> [https://oceans-and-fisheries.ec.europa.eu/policy/aquaculture-policy\\_en](https://oceans-and-fisheries.ec.europa.eu/policy/aquaculture-policy_en)

<sup>15</sup> [https://environment.ec.europa.eu/topics/water/water-framework-directive\\_en](https://environment.ec.europa.eu/topics/water/water-framework-directive_en)

<sup>16</sup> [https://environment.ec.europa.eu/topics/nature-and-biodiversity/invasive-alien-species\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/invasive-alien-species_en)

<sup>17</sup> <https://easin.jrc.ec.europa.eu/easin>

<sup>18</sup> [https://food.ec.europa.eu/animals/animal-health/animal-health-law\\_en](https://food.ec.europa.eu/animals/animal-health/animal-health-law_en)

<sup>19</sup> [https://food.ec.europa.eu/plants/plant-health-and-biosecurity/legislation\\_en](https://food.ec.europa.eu/plants/plant-health-and-biosecurity/legislation_en)

A consideration of certain treaties would also be valuable, notably a work published in 2022 on invasive alien species and emergent infectious diseases<sup>20</sup> formally adopted by the Council of Europe within the Bern Convention.<sup>21 22</sup>

The discussant concluded by urging a greater emphasis in the report on overall EU biodiversity legislation, particularly in relation to biological invasions, as an example of how environmental policy is strictly linked to and can directly benefit the One Health approach.

### Response and discussion

A chapter co-author welcomed the discussants' detailed feedback. The need for greater coverage of biodiversity was acknowledged, and the comments around financing were also well made. However, the brief time available for this exercise has inevitably resulted in omissions. Moreover, as noted in the chapter introduction, the work would have benefited from in-depth face-to-face stakeholder interviews; for instance, theories of change and global partnerships tend to be hidden in organisations' inner workings, so are unlikely to be visible in published information. A further challenge is whether to infer a 'One Health' approach in policies with One Health values as defined in Chapter 1, but which lack the explicit phrase (as, for instance, in the case of the SDG GAP process).

The speaker agreed more was needed on 'knowledge brokering', in particular on training and development of expertise, although said the working group had stopped short of prescribing 'how' this could be achieved since each Member State has the potential to deliver One Health in a different, context-dependent ways. Another participant returned to the points that not only is the environment often missing in the operationalising of One Health and in policy documents, but also the distinction between 'environment' and 'ecosystems'.

One chapter co-author questioned the second discussant's emphasis on invasive alien species, noting that habitat destruction and overuse of pesticides had greater ecological impacts in the European context, adding that given the Common Agricultural Policy's responsibility for these impacts, the One Health approach clearly entails significant trade-offs.

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<sup>20</sup> <https://rm.coe.int/inf40e-2022-report-on-alien-pathogens/1680a7bcc9>

<sup>21</sup> <https://rm.coe.int/2022-rec-215e-alien-pathogens-and-ias/1680a9495f>

<sup>22</sup> Convention on the Conservation of European Wildlife and Natural Habitats: <https://www.coe.int/en/web/bern-convention>

### Summary of recommendations

The following to be considered:

- the role of religious stakeholders in engaging hard-to-reach communities
- more on knowledge brokering, including training and expertise development
- greater coverage of EU environmental policies, including synergies with the invasive alien species management and prevention, recognising that managing biological invasions may help addressing the threat by pathogens
- other suggestions for improvement on specific sections (see above)

## **Leverage points for building capacities, planning and implementing One Health policies (Chapter 3 of the evidence review report)**

### Introduction

This chapter examines One Health as currently operationalised in the international context. It starts by looking at cost-benefit analyses and other methods in the literature to assess the viability of the One Health interventions and systems. Unsurprisingly, infectious diseases and zoonotic prevention dominate, but NCDs, environmental health aspects (e.g. biodiversity, eutrophication, food and water security, pollution, etc.), sustainability and climate change were also covered. Few papers reported net negative outcomes, although this may be due to publication bias. Approximately half of the papers failed to compare the costs and benefits of One Health approaches, some restricting themselves to scenario comparisons only. Most of those assessing costs and benefits reported a positive impact. No common agreed methodology for evaluating One Health interventions emerged; monetary outcomes tended to be expressed as utility cost-benefit ratios, non-monetary outcomes in terms of disease frequency or burden estimates (e.g. DALYs<sup>23</sup>). A properly defined research method with an agreed methodology is therefore needed to assess the effectiveness and feasibility of One Health interventions.

The chapter then presents some Europe-based One Health case studies, where again infectious diseases dominate, the trichinellosis case being a long-running exemplar of success. The cases reveal that while animal and human health can work together well in complicated institutional settings,

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<sup>23</sup> disability-adjusted life years

incorporating the environment is more difficult. Even in well-established cases, clarity on costs and benefits was lacking.

The literature review and case studies provide overwhelming support for the One Health approach in a narrow set of interventions, mostly relating to infectious diseases and vaccination campaigns. Drawing firm conclusions in other contexts is more problematic given incomplete data on costs and benefits, and the lack of attention to broader societal, environmental and animal health outcomes. Interesting new approaches are however emerging, such as an intervention to simultaneously target dog and human obesity. As noted by other report authors, determining whether or not an intervention qualifies as One Health is challenging where the term is not used; for instance, recent research showing that controlling an invasive plant species cost less than treating people with allergic reactions to the plant is a clear One Health example but is not framed as such.

The chapter concludes by highlighting the need for a common framework for considering costs and benefits, the importance of including 'the environment', and the observation that trade-offs will become more significant, and potentially intractable, as costs and benefits beyond human health are brought into scope.

### Summary of comments by the first discussant

The first discussant learned much from the document in terms of the shift from anthropocentrism, something reflected in how younger generations are now talking about 'cohabitation of species'. Overall, while a logical case can be made to change the paradigm, the evidence compiled in this chapter, and in the report as a whole, to support large scale operationalisation and to build a new system, is still 'patchy'. The assessment of the benefits of One Health across all dimensions (animal, human, environment) remains difficult, as accepted by the chapter authors. The 'Approach' section that follows the 'Summary findings' can be mistaken as part of the 'Summary findings', which is easily corrected by formatting changes.

The document is unclear about the criteria used to guide the selection of literature to review. For instance, why does the bulk of evidence presented in the chapter concern infectious diseases? The reader should perhaps be more strongly reassured that this emerges from a robust, systematic examination of all available literature, rather than from previous assumptions that One Health is mostly focused on the link between human and animal health. The discussant also called for greater clarity on how the presentation of cost-benefit ratios, while logical, linked to the chapter's objective, namely, to provide 'leverage points for building capacities, planning and implementation'. Around 45% of the reviewed publications which explored the cost effectiveness of the intervention reportedly

failed to provide binary outcomes; it might nevertheless have been useful to draw basic broad conclusions from these, rather than exclude them altogether from the analysis.

As with the literature review, more clarity is needed around the selection criteria for the case studies; for instance, are these the *best* cases for representing five key domains, or the *only* available ones for Europe? The case studies are well presented, although the discussant argued that some of the information, such as on trade-offs, synergies, EU intersectoral policies and cross-disciplinary taskforces, already occurs elsewhere in the report.

While accepting the report was still 'work in progress', the discussant was concerned that various areas linked to One Health had been overlooked, such as: the health impacts of climate change and biodiversity loss; chemical regulation; disappearance of fish species in the Mediterranean basin; connections between the health and wellbeing of fishers and protection of sea life; and NCDs (e.g. synergies between food sustainability policies, meat consumption and colorectal cancer). Under unintended consequences, perhaps something was also needed on the risk of becoming too superficial when professions and structures are integrated – something already being discussed in the health field.

### Summary of comments by the second discussant

The second discussant praised the work done on the report, and concurred with previous speakers on the limitations of the literature review, and felt it would be helpful to highlight these at the start of the chapter, rather than the end. The formulation and layout of the case studies was good, but more emphasis was needed on the main learning points from each one. For instance, in the DANMAP case, the key learning was the value of addressing the root cause, i.e. in this case, AMU (antimicrobial use). In the West Nile Virus (WNV) case, the public health literacy aspect should be emphasised; in fact, the need for the public and wider stakeholders to understand the importance of One Health concept is largely absent from the report as a whole. In the Trichinellosis case, the learning should be highlighted further that long-term sustainability of the interventions is key, even as elimination or eradication is approached; otherwise, resurgence may occur. The URBACT case should stress more the contribution of data capture, analysis and sharing towards fostering productive competition, as well as the frequent reliance on individuals for success: e.g. One Health programmes often collapse when a leader leaves for a new job. The OMEES case could offer more clarity on who trains the One Health ambassadors. On the Statens Serum Institute case, the point should be more made that the Canadian CSC found animal health benefited more than human health, which has implications for funding One Health initiatives: given that human health is typically better funded, there may be resistance to change in funding structures, if the joint action directly benefits one sector over another. While the integration of laboratories reported in the DK-Vet case saves costs, the risk of overcapacity needs to be signposted:

in the event of multiple concurrent disease outbreaks (human and animal), the load may be too great for a single laboratory to handle. The discussant proposed an additional case study on the successful removal of CFCs (chlorofluorocarbons) from refrigerants, highlighting the importance of public engagement, providing solutions and not just criticising, and the role of business innovation.

Broader recommendations for the report as a whole included stressing more the critical importance of timely data sharing, and a consideration of potential conflicts between One Health programmes (e.g. concrete flooring can reduce soil-transmitted helminth (STH) infections (Benjamin-Chung et al, 2021), but concrete has a significant negative embedded environmental impacts).

The discussant raised the question of how best to define where One Health 'ends', since almost everything in theory can be connected to the approach in one way or another (something discussed earlier in the workshop in relation to Chapter 1). Perhaps a 'degrees of separation' concept could be included to determine the impact. (A response to this question is offered below in the Introduction to Chapter 4).

The discussant closed by underlining the point that One Health programmes take time, noted the key value of the approach in reducing duplication, and emphasized the need to monitor multiple smaller projects and programmes under an overarching One Health programme.

### Response and discussion

Like others, a participant stressed the challenges of incorporating the environment into One Health approaches, and proposed as a solution to set up national environmental agencies, in the same way as was done for the European Environment Agency, to identify the environmental challenges in each EU country. The lack of clarity on costs and benefits was also corroborated by this participant, who referenced recent work undertaken in the UK on the economics of One Health interventions. Due to time constraints, no further discussion on Chapter 3 was possible, although participants were invited to use the Zoom chat function to comment.

### Summary of recommendations

The following to be considered:

- provide greater clarity on the selection process for the literature and case studies referenced in this chapter
- highlight limitations of the literature review at start not end of the chapter
- set out the main learning points for each case study
- other suggestions for improvement on specific sections (see above)

# Criteria and indicators to assess effectiveness (Chapter 4 of the evidence review report)

## Introduction

Linking to Chapter 1, this chapter sets out two major paradigms on the definition that provide the foundation for robust indicators. This first concerns the interconnectedness of humans, animals and the environment. (In response to the comment from the second discussant for Chapter 3, the speaker notes that One Health 'ends' when no interaction can be shown between humans, animals and the environment). The second paradigm is that an incremental benefit arises from closer transdisciplinary cooperation. The qualitative One Health indicators presented in the chapter draw largely from the Network for Evaluation of One Health (NEOH).<sup>24</sup> Quantitative indicators, showing both linear and non-linear relationships between One Health approaches and positive outcomes, are also available, an example of the latter being from vaccination campaigns; here, straightforward mathematical analyses of return on investment (or cost-effectiveness) demonstrate the incremental benefits of One Health. Meanwhile, multi-criteria decision analyses, a game theoretical approach, stemming from the work of economist Elinor Ostrom, provides a stringent methodology for addressing trade-offs between environment, health and society.

## Summary of comments by the first discussant

The first discussant complimented the authors for such a comprehensive report and for using contemporary interpretations of One Health. The important alignment between Chapter 1 and this one was also highlighted, echoing the earlier recommendation that some of the social sciences terminology in the first chapter may need to be spelled out a bit more for accessibility. The discussant, noting that information on economics (e.g. metrics, cost-benefit analyses) presented in Chapter 3 of the report is partly repeated in this chapter, recommended some consolidation and cross-referencing of the material.

The discussant was pleased to see elements of NEOH's work on qualitative indicators in the chapter and welcomed the contribution on quantitative indicators. The chapter needed however to set out the rationale for cost-benefit assessments: different approaches might be needed depending on whether analyses were for internal progress evaluation or for attracting external funding. The discussant noted a systematic review recently published in the journal *One Health* on the quantitative effect of One Health and multi- and cross-sectoral initiatives (Auplish et al, 2024), which might be useful to

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<sup>24</sup> <https://neoh.onehealthglobal.net/>

reference; while most literature to date compares the outcomes of One Health with uni-sectoral approaches, this new review is unusual in assessing the benefits of varying types and degrees of One Health-ness. A third group of studies examines the benefits for one sector when intervening in another that can be used to justify investment and cost-sharing. The discussant recommended adding a conceptualisation to the chapter to help readers understand that these three different categories of information tend to be generated in One Health evaluations.

The chapter would also benefit from a further consideration of neoclassical economics and other schools of thought, as raised in Chapter 1; most evaluations are currently based on a neoclassical, growth-orientated model, which has implications for One Health, especially given recent promotion of game theoretical and socio-ecological systems approaches. The discussant agreed that plenty of indicators are now available, but the chapter fails to mention that a proper evaluation is only possible with a theory of change that sets out exactly what stakeholders want the One Health intervention to achieve. This can guide the selection of the most appropriate indicators and metrics. The chapter would also benefit from a consideration of the fact that current evaluation approaches generally lack ways to capture the unintended consequences and other outcomes that often emerge from complex systems over the short, medium and longer term.

### Summary of comments by the second discussant

The second discussant concurred with the chapter authors that measuring the benefits of One Health is not easy. Ecological aspects were felt to be missing from the chapter; and 'ecosystem' rather than 'plant' health would be a better framing. The parameters used in 'Formula 4' need to be explained. The discussant agreed with the important conclusion that identifying the most appropriate indicators depends on specifics of the One Health issue, but this then complicated assessment of the One Health benefits.

### Response and discussion

One participant noted that a theory of change has been suggested by OHHLEP, yet other speakers at the workshop have seemingly proposed that different theories of change are required for different contexts; this would imply that different sets of indicators might be needed each time. One report co-author responded by pushing back against the need for theory of change, arguing that the term itself was constructivist and did not reflect the reality of social transformation, which depends rarely on theory and more often on coincidence and opportunity. This participant was keen to explore the issue further with philosophers in the report working group. The question of theories of change was also further discussed in the Zoom chat (see 'Summary of other feedback').



### Summary of recommendations

The following to be considered:

- to add greater clarity on the rationale for cost-benefit assessments, and to set out the different categories of evaluation
- further discussion about theories of change, including when determining the appropriate indicators for an evaluation
- greater attention to ecological aspects
- other suggestions for improvement on specific sections (see above)

## **Evidence-based options for policy and research gap (Chapter 5 of the evidence review report)**

### Introduction

Short-term evidence-based policy options, largely based on the case studies, are presented in Chapter 5, including compulsory engagement of the EU in sustaining biodiversity, improvement of animal welfare and protection, reducing water pollution, climate change mitigation, AMR control, integrated laboratory infrastructure and governance. A practical checklist is also provided. With mid and long-term policy options, the chapter clearly shows that dilemmas of conflicting policies arise. There are, for instance, important trade-offs to consider between agricultural intensification and animal welfare, biosecurity and biodiversity, or between farmer livelihoods and reducing the consumption of animal-sourced foods (for reasons of human health or animal rights). These conflicts demand consensus finding and cooperation between sectors. The large research gap encompasses governance, economics, biodiversity, AMR, integrated surveillance-response systems and animal welfare.

### Summary of comments by the first discussant

Commenting on the short-term evidence-based policy options presented in the chapter, the discussant noted – through the mentioning of measures such as surveillance, lab support and risk assessments – that these apparently focus on zoonoses and AMR (only). Another comment was that it should be stressed that *joint* risk assessments are needed, covering different sectors (or dimensions) of the One Health approach.

On mid and long-term policy options, EU food safety legislation also needs be included. These strict food safety rules create a structure and conditions that are demanding for farmers, veterinarians and

other food chain actors to comply with. By contrast, there are fewer EU-level health policies, there is subsidiarity, which should also be mentioned. The discussant further notes that public health traditionally places far more emphasis on NCDs (e.g. cancer, cardio-vascular diseases, etc.) than infectious diseases. Preparedness against upcoming pandemics and cross-border threats should also be mentioned.

A paragraph on migration was puzzling – this needs to be further explained or left out. Was this, for instance, suggesting that promoting One Health approaches in the Global South might somehow address this? The discussant was also surprised that while agriculture policies and public health policies were included in the chapter, ecosystem or environmental policies were absent.

Among important research gaps not currently mentioned were animal influenza, tuberculosis, vector-borne diseases, while also integrated surveillance-response systems, cross-sector work, risk communication and *joint* risk assessment needed to be stressed (as noted above). The research gaps should also reference the work ongoing on animal welfare, including in fish, and note that far greater budgets are currently being spent on public health than on animal health or environmental issues. The chapter should also call for cross-sector, in EU parlance ‘cross-cluster’, funding, specifically, clusters 1 (health) and 6 (food safety, animal health), to efficiently cover One Health in research proposals. The discussant argued that time is now ripe for an institutional partnership on One Health, where governments take the leadership for coordination, alignment of structures, and funding.

Finally, education is necessary, including in the short term. This should encompass training on One Health at all levels, including at colleges and at primary schools. Due to time constraints in the closing stages of the workshop, the discussant sent on further written comments.

### Summary of comments by the second discussant

A second discussant, who had to leave before the end of the session, sent written comments, which are reproduced here.

The threats we face are global, so the focus of this report should limit itself to Europe only. However, Europe can play a leading role both in research and advocacy for One Health. It is important to develop a co-design and co-engagement process on an international scale to effectively address these challenges.

It is also crucial not to concentrate efforts solely on the academic sector. There is a clear need to link scientific research with societal needs, to ensure that the solutions developed are relevant and impactful. Establishing this connection is vital to identify clear objectives and goals.

Currently, there is a significant lack of indicators to measure the impact of a One Health approach. Developing these indicators is necessary to quantify and assess the effectiveness of our strategies.

Visibility and a strong presence of Europe in this field are extremely important. Establishing a robust and visible platform, such as a European Centre for One Health, is essential. This centre should be ambitious and avoid the limitations of existing institutions like the European Centre for Disease Control, which is relatively small compared to its US counterpart.

### Response and discussion

On the question of migration, raised by the first discussant, one participant drew attention to the earlier mention of the religious as a potential influence of One Health policy in the EU, linked to a rise in the Muslim population (see discussion of Chapter 2). Regarding the debate over indicators and the theory of change, another participant drew attention to some remarks in the Zoom chat (see 'Summary of other feedback') and reiterated that the recent systematic review on quantitative indicators in the journal *One Health* (see the comments on Chapter 4) should be studied. It was asked whether the fields identified for the gap analysis were selected based on a systematic approach or consensus amongst the chapter authors, a chapter co-author conceded that these were arrived at in a fragmentary way due to time constraints. The final round will see a systematic approach that invites input from all collaborators.

### Summary of recommendations

The following to be considered:

1. coverage of other areas of EU policy, including food safety and environmental policy
2. clarifying the reference to 'migration'
3. greater stress on the need for education at all levels
4. a recommendation for a new institutional partnership or European Centre for One Health
5. a more systematic approach to identify recommendation and fields for the gap analysis
6. other suggestions for improvement on specific sections (see above)

## Summary of other feedback

A number of comments were made via the 'chat' function in Zoom, which are summarised as follows:

- The question of microbe health highlights the difficulty in defining One Health and 'optimization'. Under equity in One Health, any component of life, even if burdensome to

humans, must be considered the same way. Humans must not be placed beyond the life components. We need parasites, bacteria and viruses as much as they need us to live. Pathogenic bacteria are an extreme example, but with urban rats too the issue arises: under a One Health approach we cannot routinely kill rats to safeguard human health. Given that more than half of all species are parasites or pathogens, discussions about biodiversity can very quickly end up here.

- France and other EU countries, while planning the second phase of EU partnerships for the period 2025–2027, supports the idea of a global One Health partnership tackling many more aspects of what could be a global response under a One Health operationalisation approach (e.g. NCDs, new farming production systems, etc.). This initiative has so far failed, but such considerations of research studies could be back within the next EU research framework programme (FP10).
- Biological invasions and One Health are linked in that invasive alien species may act as vectors and hosts of pathogens in new ecosystems (besides acting as pathogens themselves), and ultimately also in that ecosystems degraded by other drivers of biodiversity loss are more subject to invasions. Also, highlighting the need to address the threat from invasive alien species may help in getting funding, with co-benefits for other One Health dimensions.
- A theory of change is a dynamic and living tool that can assist in the planning, implementation, and evaluation of a One Health initiative. When used in a participatory and engaging manner, it can crystallise a way forward and define a starting point. During implementation, it will evolve with the social, economic, and technical changes that occur and can serve as a reflection point. Given all contexts and systems are different, we cannot have a one-size-fits approach all for problems, solutions and value systems of different societies. Thus, theories of change must be context-dependent, localised and - importantly - be elaborated in a participatory way with the people who are part of the initiative or in any way affected by it. An example is the dilemma of whether to abolish animal agriculture, which has many economic, social, environmental, ethical and moral dimensions. A One Health conceptualisation of this question would vary with differing countries, contexts and societal values, as will associated metrics and decisions. Thus, different theories of change, and consequently different indicators and measurements (including those for emergent properties), are expected, linked to decisions made in a transdisciplinary way, and closing or continuing the cycle of planning, implementation, evaluation, learning, and so on.

## Closing remarks

In closing, the Chairs of the Working Group expressed their gratitude for all the important feedback received, and the time and effort put in by participants, and reported that a meeting had been

## Report of the workshop

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scheduled imminently to arrange how best to incorporate as many comments as possible. A representative of the SAPEA board added their thanks to the Working Group and to all participants, for the assistance in identifying gaps, biases and possible blind spots in the current report draft. It was noted that SAPEA would draft and share this summary report of the workshop with all participants, and that the contribution of all participants will be publicly recognised in the final report. Close of workshop.

# Annex 1: References

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# Annex 2: List of attendees

## Invited experts

- **John Amuasi**, Kwame Nkrumah University of Science and Technology, Ghana; Bernhard Nocht Institute for Tropical Medicine in Hamburg ; African Research Network for NTDs, Germany Ghana
- **Arnaud Callegari**, French Agency for Food, Environmental and Occupational Health & Safety (ANSES), France
- **Gábor Földvári**, HUN-REN Centre for Ecological Research, Hungary
- **Barbara Häslér**, Royal Veterinary College, UK
- **Hein Imberechts**, Sciensano, Belgium
- **Benjamin Roche**, French National Research Institute for Sustainable Development (IRD)
- **Riccardo Scalera**, IUCN, Italy
- **Terence Peter Scott**, Global Alliance for Rabies Control, Luxembourg
- **Tarja Sironen**, University of Helsinki, Finland
- **Chris Walzer**, Wildlife Conservation Society and University of Veterinary Medicine, Vienna, Austria
- **Andrea S. Winkler**, Center for Global Health, Department of Neurology, Technical University of Munich (TUM), Germany; Department of Community Medicine and Global Health, Institute of Health and Society, University of Oslo, Norway; Department of Global Health and Social Medicine, Harvard Medical School, Boston, MA, USA
- **Alban Ylli**, Tirana Medical University, Albania

## Members of the SAPEA working group

- **Tuomas Aivelo**, University of Helsinki, Finland
- **Lisa Boden**, University of Edinburgh, UK
- **Saana Jukola**, University of Twente, Netherlands
- **Tyra Grove Krause**, Statens Serum Institut, Denmark
- **Fabian Leendertz**, Helmholtz Institute for One Health, Germany
- **Tomislav Mestrovic**, University North in Croatia, Croatia
- **Serge Morand**, French National Centre for Scientific Research (CNRS), France
- **Lucy J. Robertson**, Norwegian University of Life Sciences, Norway

## Annex 2: List of attendees

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- **Antonia Trichopoulou**, Academy of Athens, Centre for Public Health Research and Education, Greece
- **Jakob Zinsstag**, Swiss Tropical and Public Health Institute, Switzerland

## Members of the Group of Chief Scientific Advisors

- **Nicole Grobert**, Chair of the Group of Chief Scientific Advisors

## Members of the SAM Unit

- **Annabelle Ascher**, EC SAM Team Policy Officer
- **Fergal Donnelly**, EC SAM Team Policy Officer
- **Leonard Engels**, EC SAM Team Policy Officer
- **Nikolaos Stilianakis**, EC SAM Team Policy Officer
- **Ingrid Zegers**, Team Leader of the EC SAM Team

### *Observers from the European Commission*

- **Ana Patricia Lopez Blanco** (AGRI)
- **Agnese Gasparini** (SANTE)
- **Jean-Charles Cavitte** (AGRI)
- **Barbara Kinross** (INTPA)
- **Lorena Korosec** (ENV)
- **Carlos das Neves** (EFSA)
- **Alexander Rogge** (SANTE)
- **Isabelle Rollier** (SANTE)
- **Carmen Varela Santos** (ECDC)
- **Marta Valenciano** (SANTE)
- **Sigrid Weiland** (SANTE)

## Members of SAPEA

- **Stefan Constantinescu**, Chair of the SAPEA Board
- **Helen Eenmaa**, Member of the SAPEA Board
- **Rúben Castro**, SAPEA Scientific Policy Officer
- **Hannah Macdonald**, SAPEA Scientific Policy Officer
- **Stephany Mazon**, SAPEA Scientific Policy Officer



## Annex 2: List of attendees

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- **Céline Tschirhart**, SAPEA Scientific Policy Officer
- **Dan Eatherley**, Science Writer

# Annex 3: Programme

13:00	Welcome and introduction to SAPEA
13:05	Introduction to the SAM and GCSA, and background to the request
13:15	Overview of the SAPEA evidence review report
13:25	Keynote: overview of the SAPEA evidence review report, with observations on strengths, possible limitations and gaps; General discussion
13:45	Overview of Chapter 1: One Health definition in the EU context: Discussant responses, general discussion
14:15	Overview of Chapter 2: Actors and policies relevant to One Health: Discussant responses, general discussion
14:50	Break
15:00	Overview of Chapter 3: Leverage points for building capacities, planning and implementing: Discussant responses, general discussion
15:40	Overview of Chapter 4: Criteria and indicators to assess effectiveness: Discussant responses, general discussion
16:20	Overview of Chapter 5: Evidence-based policy options: Discussant responses, general discussion
16:55	Closing remarks and next steps

# Annex 4: Acknowledgements

All invited experts, who contributed their time and expertise to provide feedback on the SAPEA Evidence Review Report and reviewing the draft expert workshop report.

Dan Eatherley, for synthesising the outcomes of the workshop and drafting this report.



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Within the Scientific Advice Mechanism, SAPEA is funded by the European Union.  
The activities of associated partners Academia Europaea and Cardiff University  
are funded by UKRI (grant number 10033786).