



# **Scientific Advice Mechanism**

## **European Commission's Group of Chief Scientific Advisors**

### **Scoping paper:**

**«Cross sectoral evidence based governance for one health in the EU »**

**«*publication date*»**

The EU is facing many intrinsically systemic and cross-sectoral challenges, including the management of complex crises, the energy transition, the pandemic, the development of a sustainable food system and the operationalisation of One Health. These challenges often require a knowledge paradigm shift towards truly transdisciplinary approaches and rapid application in the real world with little room to experiment in a safe space ahead of time. A systemic approach effectively means that multiple policy departments must work together in a coherent manner to ensure that i) relevant expertise and competences are integrated and that ii) synergies, possible trade-offs, and unintended consequences are taken into account from the earliest stages. Whilst recommendations towards such systemic approaches and cross-sectoral governance at the EU level have already been provided by the Group of Chief Scientific Advisors (GCSA) in the Scientific Opinions “*Towards a Sustainable Food System*”<sup>1</sup> and “*Strategic Crisis Management in the EU*”<sup>2</sup>, there is still a need for more general in-depth analysis of scientific evidence, knowledge, and practical examples of approaches to manage policymaking for other complex fields in a systemic manner. One Health is a prime candidate for such a complex challenge.

Originally, the concept of “One Health” has developed from the recognition of the strong links and interdependencies of human and animal health (Schwabe, et al., 1964<sup>3</sup>). During the Covid-19 pandemic, the One Health approach received a strong boost. The pandemic has shown very clearly how interlinked the prevention of and response to pandemics, tackling antimicrobial resistance, equitable access to high-quality health care and protection of the environment are. More recently, aspects of ecosystems health have also been included, whereby the influence of changing landscapes, deteriorating environmental conditions and climate change on the emergence and resurgence of both infectious and non-communicable diseases are also considered (Zinsstag et al 2012; Hulme 2020). Furthermore, both human physical and mental health have been correlated with healthy ecosystems (Jimenez et al., 2021). Understanding the complexity of ecosystems is becoming increasingly important in the face of accelerated global environmental change and biodiversity degradation and requires indeed knowledge and actions from many disciplines. In the context of food security and sustainability (Garcia et al 2020), One Health permits to better manage transboundary diseases that may potentially impact on food production and availability (as in the case of preventing the introduction and spread of plant pests in the Union). The connection between urban areas and health has been recognised and acted upon since the early 19<sup>th</sup> century (Coburn 2015) and has been more recently taken up again by an UN-HABITAT and WHO (2020) report on One Health initiatives in cities.

‘One Health’, similar to other concepts developed to synthesise new approaches for solving complex problems such as ‘sustainability’ or ‘resilience’, is often perceived as new

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<sup>1</sup> [https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/scientific-support-eu-policies/group-chief-scientific-advisors/towards-sustainable-food-consumption\\_en](https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/scientific-support-eu-policies/group-chief-scientific-advisors/towards-sustainable-food-consumption_en)

<sup>2</sup> [https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/scientific-support-eu-policies/group-chief-scientific-advisors/strategic-crisis-management-eu\\_en](https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/scientific-support-eu-policies/group-chief-scientific-advisors/strategic-crisis-management-eu_en)

<sup>3</sup> Schwabe was pioneering the idea in the Sixties even though he actually used the term “One medicine” later in the Eighties.

‘buzzword’ that lacks the necessary theoretical and operational foundation and that instead duplicates existing ones. To counteract this risk and the perception of One Health as being too broad, *i.e.*, covering too many aspects and topics ranging from human and animal health to ecosystems and landscape changes to urban infrastructures (Ramaswami 2020) and social determinants of health, making it difficult to operate, it needs to be understood as the nexus between those different but tightly interconnected fields. Such nexus is framed in the One Health definition of the Quadripartite that constitutes the reference for ongoing applications of One Health in different countries. According to the Quadripartite Joint Action Plan One Health is defined as *“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 inter-dependent”*<sup>4</sup>.

As stated in the Budapest Declaration, adopted on 6 July 2023 by the ministers and representatives of the WHO-Europe Region responsible for health and the environment, this nexus needs to be operationalised in dual direction: making health systems more environmentally friendly and climate neutral and on the other hand better integrate environmental and health policies. (Seventh Ministerial Conference on Environment and Health 2023).

Some lessons can already be learned from applications of One Health. Firstly, the goals for which the One Health approach is promoted must be clearly outlined at beginning of the process. GCSA could be asked to set priorities based on their expert knowledge. A non-exhaustive list of examples of such priority actions may include:

- tackling antimicrobial resistance considered as “the silent pandemic”<sup>5</sup>, including the use of antibiotics and fungicides in agriculture (Miller et al 2022),
- managing crises with health implications, whether or not caused by a medical trigger (Dacso et al 2022),
- pandemic surveillance and early warning, enforcing cross-surveillance of diseases in animals and humans bringing together veterinarians and medical doctors investigating similarities and differences between illnesses in humans and animals (Angelou et al 2021),
- preventing and controlling the spread of diseases in animals against spill-over and emergence of pandemics in humans
- promoting ‘One Health’ approach in the area of risk assessment (e.g. more systematic joint risk assessments by EU agencies, as relevant),
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<sup>4</sup> The term environment is intended as the surroundings where different kinds of organisms live, whilst an ecosystem is a place where different kinds of biotic creatures live, eat, and stay for their daily living, acting as a transversal layer where interactions between environmental abiotic factors and living organisms occur.

<sup>5</sup> Council conclusions of 22 June 2012 on the impact of antimicrobial resistance in the human health sector and in the veterinary sector — a ‘One Health’ perspective (2012/C 211/02).

- monitoring food safety to minimise the risk of foodborne pathogens and of toxic residues,
- promoting well-being across different age and social groups in communities both in urban and rural environments, taking into consideration the differential risk of exposure to work related diseases (EU-OSHA 2020),
- promoting healthy ecosystems that provide services supporting also human well-being,
- ensuring healthy food production as well as quality and availability of freshwater by monitoring of the environment, in particular the quality of soils,
- surveillance of contaminants that can impact the diversity of environmental microbiomes (soil, water, food, etc.) as well as agro-chemicals (e.g. plant protection products) that can impact on human and environmental health, including non-targeted species such as pollinators.

For One Health to achieve its goals the concurrent contribution of different sectors with different competences and expertise is indispensable. Cross sectoral governance and financial arrangements are required by the systemic integration of disciplines and fields to be interconnected by the One Health approach (see also Deere-Birkbeck, 2009). Integrated arrangements beyond traditional ones are needed to overcome the barriers between separated offices and departments pursuing well defined agendas and with clearly delimited objectives (National Academies of Science 2023). Cross sectoral governance, though, entails a number of challenges. The most obvious relate to clear mandates, resources, and financing.

Equally important, though, are challenges related to data management and knowledge. Solutions for improving One Health surveillance focus mainly on enhancing the integration and sharing of surveillance data, added to IT infrastructures and analytical capabilities (Ribeiro et al 2019). The evaluations that have been carried out insofar on One Health initiatives highlight how sharing and co-producing knowledge across sectors is particularly critical (Pelican et al 2019). Sharing and co-producing knowledge requires time, commitment, trust, and open mindset, being able and disposed to work outside well-defined boundaries. An additional burden derives from the difficulty to carry out transdisciplinary research and studies for a number of reasons that include the lack of criteria to evaluate what constitutes good quality transdisciplinary research and its outputs (Belcher et al 2016). Specific training to conduct such type of research seems necessary, as pioneering examples of educational programs in One Health demonstrate<sup>6</sup>.

Some challenges of cross sectoral governance in particular relevant to crisis management at the EU level have already been addressed and solutions highlighted by the GCSA in the Opinion on “Strategic Crisis Management in the EU”, in which they have pinpointed the need for a truly networked setting with a core-periphery configuration. Another challenge from the financial governance in the EU is that financial programmes for public health issues

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<sup>6</sup> See for example the educational and training modules developed within the EJP on One Health: <https://onehealthejp.eu/community/education-and-training>

(EU4Health) and for veterinary public health (Single Market) are two different programmes, which make the funding of One health projects difficult. There is still the need to explore to what extent such governance networked approach can function also for other complex problems requiring cross sectoral and cross stakeholder collaboration; and how governance needs to be adapted to the specificities of the One Health approach.

The examples and case studies that have been analysed until now refer to an international context including but not limited to the EU (Hitziger et al 2021). Others refer to national cases, such as the One Health approach to anti-microbial resistance developed in Denmark (Queenan et al 2016). Useful evaluations of the tools to implement One Health that have been applied insofar are also available. Here the issue is not limited to the identification of the best tools, but also on eliciting criteria that help discriminate the tools that are most effective to achieve a specific goal and those that are more suitable in a specific geographic, political, and cultural context. The applicability of the identified tools to the EU level needs to be analysed.

### **Question asked to the GCSA**

The GCSA are asked to provide scientific advice on the following overarching question:

***Considering a complex policy area, i.e. One Health, 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?***

In order to apply this overarching question to the example of One Health, a number of sub questions need to be addressed:

- 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?

The advice should respect the EU competence and remit, and the principle of subsidiarity. The focus should be on the EU policy level but take into consideration that One Health policies require cross level collaboration. The advice should provide a clear direction for the formation of One Health policy at the European Commission level, with the aim to achieve its

operationalisation and adaptation to MS across Europe. This means to develop recommendations for EU policy taking into account the multiple scales required for One Health implementation, from the local to the national and in the coordination at the international levels. For this the experience gained by EFSA, ECDC, EEA, EMA and ECHA in developing multiagency collaboration<sup>7</sup>, report of the EC Junior Professionals Project ‘Operationalisation of the One Health approach across the EC’ (“internal to the Commission, unpublished”) and the research conducted by the JRC<sup>8</sup> on One Health could be leveraged upon.’

The scientific opinion should be handed over by Q2 2024 on a date to be established with the Commissioners for Health and Food Safety and for Innovation, Research, Culture, Education and Youth. It will rely on the work of the Science Advice to Policy by European Academies (SAPEA) consortium, which should be tasked with developing a comprehensive and cross-disciplinary evidence review for that purpose (including natural sciences, social sciences, and the humanities).

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<sup>7</sup> <https://www.efsa.europa.eu/sites/default/files/documents/news/one-health-cross-agency-task-force.pdf>, see also Bronzwaer et al (2022), *One Health collaboration with and among EU Agencies – Bridging research and policy*, *One Health* 15.

<sup>8</sup> [Health crises response \(europa.eu\)](https://healthcrisesresponse.europa.eu/); [Healthy biodiversity \(europa.eu\)](https://healthybiodiversity.europa.eu/)

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