

ECDC One Health Framework

May 2024

Introduction

This document describes a framework for how the European Centre for Disease Prevention and Control (ECDC) will strengthen, develop and implement the One Health approach in its activities for the prevention and control of communicable diseases in the European Union/European Economic Area (EU/EEA) in order to improve public health in the Member States.

In addition, the proposed One Health framework seeks to unite the efforts of ECDC, the European Commission, other EU agencies and the Member States in identifying, preventing, controlling and responding to current and emerging infectious diseases through a One Health approach. By fostering collaboration across sectors, mandates and borders, the aim is to enhance and develop the interoperability and coordination of existing efforts for the prevention and control of communicable diseases to improve and safeguard public health in the EU/EEA.

The concept and benefits of the One Health approach are well recognised at EU and Member State level in both a scientific and political context, however, the practical implementation across sectors at EU level and in many Member States has only just begun. Moreover, the process will require substantial efforts and investment of resources at all levels. This can be attributed to the complex nature of the concept and the extensive coordination and collaboration required to follow a One Health approach.

Adoption and implementation of the One Health approach requires cross-sectoral collaboration, while acknowledging that attention to environmental health is crucial. Planetary health, as developed by the Lancet Commission [1], recognises that human health and civilisation depend on natural systems and their wise stewardship. This approach seems particularly relevant in the current context of climate change, where human health increasingly suffers under the progressive degradation of natural systems. According to the recently published European Climate Risk Assessment [2], Europe will not be spared, as it is the fastest warming continent in the world. Climate-related health risks include factors favouring the spread of infectious diseases on the European continent, such as temperature-induced migration of vectors transmitting diseases and the increased occurrence of extreme events, such as flooding or droughts, favouring the spread of food- and waterborne diseases. Health equity is particularly crucial in this context, with social vulnerabilities expected to increase as climate change affects the EU/EEA, including its outermost territories.

ECDC's vision is to help save lives through the improvement of public health systems in Europe by applying scientific excellence, which, in turn, will enable Member States, the European Commission, and other partners to drive forward public health policy and practice. At agency level, the implementation of the One Health approach has implications for both ECDC's internal activities and its interactions with partners and stakeholders in the Member States, the European Commission, and other EU agencies.

The importance of applying the One Health approach is emphasised by the Regulation 2022/2371 on Serious Cross-Border Threats to Health [3], which establishes the requirement for regular assessments of the status of preparedness in the Member States (Articles 7 and 8) and the creation of an EU Health Task Force to support countries in preparing and responding to health emergencies.

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At global level, the One Health High Level Expert Panel (OHHLEP) appointed by the Quadripartite Secretariat for One Health (consisting of the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO), the World Organisation for Animal Health (WOAH) and the United Nations Environment Programme (UNEP) has established an overarching Theory of Change (ToC). This theory provides a conceptual framework for implementation of the One Health approach and establishes three pathways:

- 1) Policy, advocacy and financing
- 2) Organisational development, implementation, and sectoral integration, and
- 3) Data, evidence, education and knowledge exchange [4].

Interdependencies between the ECDC One Health Framework, the Quadripartite ToC and other frameworks and programmes are detailed in Annex 1. In addition to the Quadripartite Secretariat, other key stakeholders in the area of climate data and research are Copernicus Climate Change Service (C3S), the Joint Research Centre of the European Commission (JRC) and the WHO European Centre for Environment and Health. These stakeholders are producing or supporting EU-wide research under Horizon Europe (Climate & Health Cluster) [5]. A list of other potential stakeholders is presented in Annex 2.

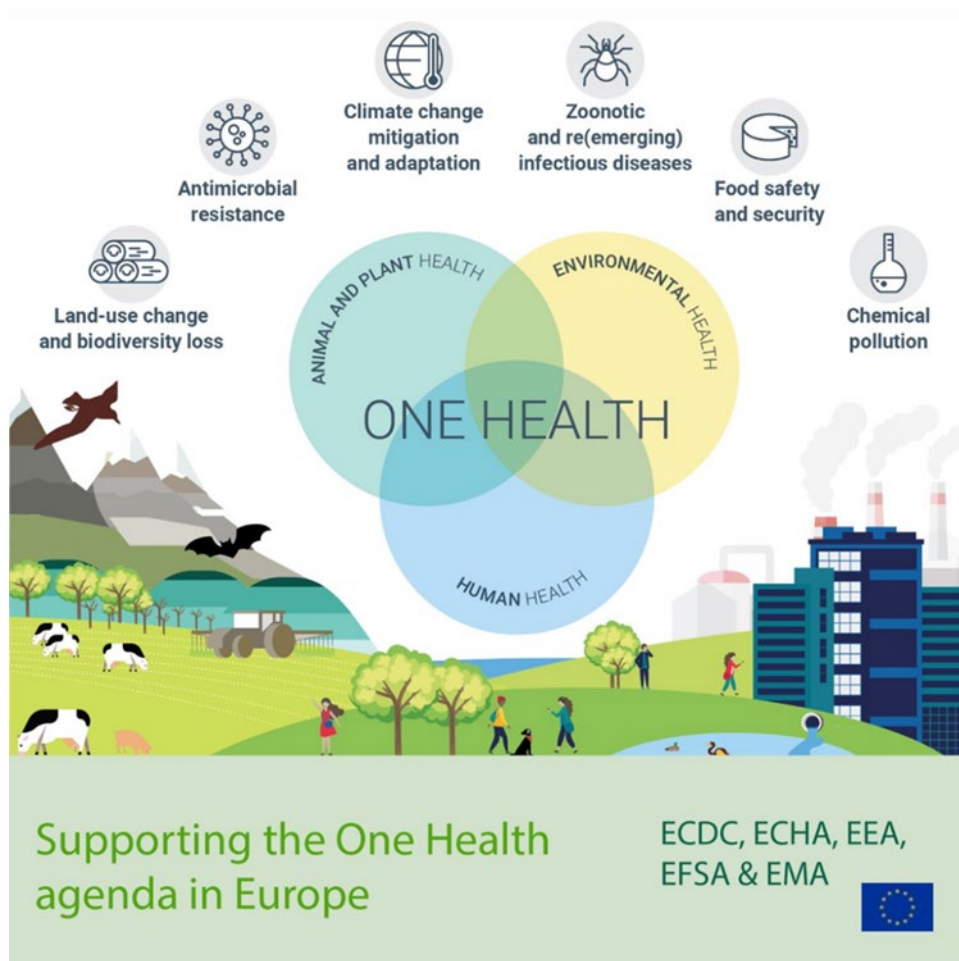
This document describes the pathways to enable the One Health approach and provides a set of strategic objectives (Table 1) to be achieved in order to implement the One Health approach internally at ECDC and externally in interaction with Member States and other partners and stakeholders. It also sets out the means for achieving these objectives.

Definitions of One Health

The EU regulation 2022/2731 on serious cross-border threats to health (SCBTH) Article 3 provides the following definition of One Health: 'One Health means a multi-sectoral approach which recognises that human health is connected to animal health and to the environment, and that actions to tackle threats to health must take into account those three dimensions'. [3]

At global level, One Health has been defined by the One Health High Level Expert Panel (OHHLEP) [6] of the One Health Advisory Group for the Quadripartite organizations: the 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) as 'an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals, and ecosystems. It recognises that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent.' [5].

The figure below illustrates the interface between human, animal, plant, and environmental health and the major areas targeted by the One Health approach.



Source: the EU Cross-Agency One Health Task Force

The significance of applying the One Health approach

The COVID-19 pandemic was an unprecedented challenge, not only to healthcare and public health, but also to other sectors, and to society in general, throughout the Member States and worldwide. The course of the pandemic demonstrated that the public health sector cannot operate independently or in isolation, but that coordination, collaboration and interoperability across sectors, mandates and borders is crucial to work effectively on preparedness, prevention, and control of communicable diseases. Therefore, both existing and new public health activities with links across the human, animal and environmental sectors must adopt a One Health approach to provide a sound basis for assessing the risk to humans of infectious diseases. This One Health approach should also inform prevention, control, and risk management activities.

A vast majority of the current and emerging communicable diseases constituting a threat to human health are zoonotic and originate from reservoirs in animals. The frequency and severity of threats arising in the animal-human interface are increasing, and some have a significant long-term impact. In recent decades, the use of a One Health approach to prevent and contain antimicrobial resistance has been given high priority at EU level, as this represents a global health challenge affecting human and animal health, food security and the environment [7]. Similarly, long-standing efforts have been made at EU level to improving food safety through a One Health approach to reduce the risk of foodborne illness and limit the spread of antimicrobial resistance in the food chain [8].

COVID-19 is the latest example of a pandemic caused by a zoonotic pathogen. Several other zoonoses (e.g. Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS-CoV), zoonotic influenza (H5N1, H7N9, H1N1), mpox and Ebola virus diseases) are examples of diseases originating from an animal reservoir with the potential to cause epidemics and pandemics in humans.

The European Parliament has adopted a resolution on the COVID-19 pandemic: 'Lessons learned and recommendations for the future (2022/2076(INI)' [9] which includes the following points:

- 244. Highlights that emerging zoonotic infectious diseases are becoming increasingly common, and that 75% of human infectious diseases are zoonotic; insists that COVID-19 made it unmistakably clear that human, animal, plant and environmental health are inextricably interlinked and need to be addressed in a consistent and holistic manner, fully adhering to the One Health approach;
- 249. Underlines that mainstreaming One Health means being better able to prevent, predict, prepare for, detect and respond to health threats at global, EU and national levels and recommends that the One Health approach becomes a guiding principle in all public health policy initiatives and measures and in pandemic preparedness programmes, stresses the need for pandemic preparedness actions, including vector control for emerging zoonoses;
- 251. Calls for the establishment of a European cross-agency task force dedicated to the One Health approach to advance transdisciplinary research and cross-sectoral scientific advice.

Beyond the risk posed by current and emerging zoonotic pathogens, the implementation of the One Health approach represents a useful and effective concept for intersectoral cooperation. By better understanding the complex ecology of infectious agents, and employing the capacities of different sectors, it will be possible to improve the identification, prevention and control of infectious diseases, and preparedness for future events.

Enabling pathways to One Health

Defining, implementing and consolidating One Health procedures

The cross-sectoral nature of the One Health approach requires new or modified methods of collaboration and coordination. Due to the traditional separation of areas of responsibility and competence, which may also be reflected in the legal basis for the activities of the various sectors, current workflows and procedures have been developed in isolation over many years. As a result, they may constitute obstacles to collaboration when applying a One Health approach. It therefore seems necessary to clarify the terms for collaboration between stakeholders. This will entail negotiating roles and responsibilities, taking into account the resources and mandates of the parties involved. Enabling the different sectors to collaborate will also require alignment of processes and procedures, and in some cases, agreement and creation of new work processes, output formats, approval procedures, etc. Due to divergent sectoral priorities and the complexity of issues addressed by the One Health approach [10], a common set of shared principles and values should be agreed upon. These could be subject to regular evaluation to adapt to evolving situations, and conflict resolution plans could be developed. Defining the conditions of collaboration will ensure that One Health partnerships can operate in crisis situations, when faced with uncertainty or a lack of time and resources. Therefore, for ECDC's One Health work to be effective, these stages of adaption must precede the actual implementation of the One Health approach, especially in relation to ECDC's stakeholders and collaborators. The One Health approach will also need to be consolidated and reinforced, through continuous collaboration and strong commitment among all the parties involved.

Establishing monitoring and evaluation procedures for One Health implementation

For continuous quality improvement, a monitoring and evaluation (M&E) mechanism should be established for the One Health implementation. This mechanism should provide an assessment of the processes, outputs and outcomes achieved under the One Health framework. Indicators of success, qualitative and quantitative targets for those indicators, and timeframes for their achievement, should be defined as part of the M&E mechanism. Furthermore, lessons can be learned from the implementation of One Health and these can be identified through workshops, interviews, or surveys. The results can be used to adjust the annual work plans and activities of the Centre conducted through a One Health approach.

Principle of independence

ECDC's internal work in a One Health perspective, as well as the Centre's One Health-related collaboration with the European Commission, other EU agencies and the Member States, should be conducted in agreement with the ECDC policy on scientific integrity and independence [11]. Through the preparatory work described above under 'Defining, implementing and consolidating One Health procedures', clear roles and responsibilities must be defined and allocated to parties participating in any One Health collaboration involving ECDC. In the case of joint scientific outputs, relevant work processes (e.g. the process of scientific clearance) should be communicated to the collaborating parties to secure understanding that ECDC must adhere to the principles of independence and relevance. Furthermore, if any associated third-party agreements are required for the collaboration to take place, these should be developed according to ECDC's internal procedure IP109 on agreements with third parties.

Mobilising and securing resources for One Health implementation

The work on developing and implementing a One Health approach will be characterised by an increased need for coordination, collaboration and communication at all levels. This will apply at agency level between units and groups, at EU level between agencies, and at national level in the Member States. The work will typically be resource-intensive and time-consuming, and an increased interaction will be required between the Centre and other EU agencies, the Member States and the European Commission.

The implementation of the One Health approach into ECDC's activities on prevention and control of communicable disease will predominantly be undertaken by the Centre's three operational units (Scientific Methods and Standards [SMS], Public Health Functions [PHF] and Disease Programmes [DPR]) with an impact on work processes and output generating activities. To secure implementation of a One Health approach at agency level, a continued concerted effort and understanding will be required across all units of the Centre.

Implementation of the One Health approach

Implementation of an effective One Health approach requires communication, coordination and collaboration between relevant sectors and disciplines, such as agriculture, environment, human medicine, veterinary medicine, epidemiology, environmental and social sciences, governance, etc. This type of collaboration will need to take place at international, national, regional and local level, to address health events of various types and sizes.

In line with the tasks in ECDC's reinforced mandate (Article 5 (3i))[12], the Centre follows a One Health approach when identifying risk factors for disease transmission and the associated disease burden, and analysing the correlation between disease transmission for zoonotic, food and waterborne diseases, other relevant diseases and special health issues.

To ensure the development and consistent implementation of the One Health approach within the Centre, a dedicated One Health Task Force has been established, with the involvement of the Disease Programmes (DPR), Public Health Functions (PHF) and Scientific Methods and Standards (SMS) Units. The One Health Task Force advises ECDC's Director, the Director's Consultation Group (DCG) and various steering committees on decisions regarding One Health and provides strategic direction for the Centre while it is implementing the One Health approach. Due to the temporary nature of the ECDC One Health Task Force, it is foreseen that there will be a need for another organisational entity (e.g. a One Health Working Group) to provide continuous support for implementation of ECDC's One Health framework and to take over the advisory role of the Task Force.

To inform the implementation of the One Health approach at ECDC, an inventory of the Centre's current One Health-related activities has been compiled. This will be regularly updated and a gap analysis will be performed to identify the best opportunities for implementing the One Health approach through the different 'ways and means' defined by the Framework to achieve its strategic objectives across the Centre. In addition, an internal survey is planned to identify obstacles and barriers to One Health implementation at ECDC.

At EU agency level, ECDC has engaged with the four other agencies of the EU Committee on Environment, Public Health and Food Safety (ENVI) to establish an EU Cross Agency One Health Task Force. The five EU agencies, (the European Chemicals Agency (ECHA), the European Environment Agency (EEA), the European Food Safety Authority (EFSA), the European Medicines Agency (EMA) and ECDC) will pursue the four One Health priorities [13] set out below at EU/EEA level.

1. The scientific evidence base for One Health action needs strengthening. Ongoing knowledge gaps should be filled for areas such as AMR, infectious diseases, chemical pollution and the effects of climate change on health. Data availability, accessibility, interoperability and reusability must be improved. Horizon Europe, the current EU framework programme for research and innovation, and the EU4Health programme are critical in this respect. As EU agencies, we are committed to helping **frame research needs from a One Health perspective**, promoting synergies between research and innovation efforts and making use of relevant research outcomes [14].
2. The One Health approach should be mainstreamed in the area of **scientific advice and risk assessment**. As EU agencies, we recognise that our scientific advice on topics such as animal and environmental health, food safety, environmental sustainability, climate change-induced health impacts and nutrition must be increasingly integrated and approached from a One Health perspective [15]. In the area of regulatory science, more proactive sharing of information between our agencies will facilitate the transition to more integrated risk assessment of pesticides and other chemicals. Collaboration under the recent Regulation on Serious Cross-Border Threats to Health will support the EU's preparedness and response to emerging health crises in a way that is consistent with the One Health approach.
3. We highlight the importance of establishing intersectoral One Health coordination mechanisms including human, animal and environmental sectors and **aligning surveillance and early warning systems in Europe** with the One Health concept. **Integrated surveillance systems**, including ecological monitoring and information on the drivers of disease emergence, should be prioritised. In turn, this would help overcome existing silos between sectors and actors [16].
4. The key to successfully designing and implementing One Health initiatives and policies is to strengthen **One Health educational and training programmes** [17]. We are convinced that efforts to build One Health capacity for risk assessors and professionals from the medical, veterinary, agriculture and environmental sectors need to be supported and promoted [18].

These priorities reflect the role of the participating EU agencies and their ambition to improve cross-sectoral coordination and collaboration from a One Health perspective, in line with recommendations from the European Court of Auditors on the future of EU agencies (2020) [19].

Expected impact

This framework is designed to guide and facilitate the implementation of a One Health approach in ECDC's activities on prevention and control of infectious diseases, and to strengthen the collaborative efforts of ECDC, other EU agencies, the European Commission, and the EU/EEA Member States in the area of public health. The intended impact is an improved and consolidated collective ability to prevent and control current and emerging threats to human health from communicable disease in the EU/EEA and beyond, by implementing a One Health approach that recognises the interconnected nature of human, animal, and environmental health.

Strategic One Health objectives

Based on the preparatory internal and external work described under 'Enabling pathways', ECDC will be able to implement a One Health approach internally and in its external activities with the European Commission, other EU agencies, the Member States and other stakeholders across sectors, mandates, and borders in the EU/EEA. The aim will be to enhance and develop the interoperability and coordination of existing efforts within prevention and control of communicable diseases and this can be achieved by accomplishing a set of strategic One Health objectives (Table 1).

Table 1. Proposed strategic One Health objectives for ECDC, the ways and means to achieve them, related resource needs and references to EU Regulations, the Single Programming Document (SPD) 2024–2026 [20] and other relevant documents

No	Strategic One Health objectives	Ways and means	Resource needs	References
1	A One Health collaboration and coordination mechanism established between ECDC and other relevant EU agencies (EFSA, EMA, EEA, ECHA).	<p>Through the establishment and consolidation of the EU Cross Agency One Health taskforce.</p> <p>Through joint procurement among the agencies.</p> <p>Through negotiation of the terms of the coordination mechanism, with clear roles, responsibilities, and communication flow developed between the EU agencies.</p>	Staff and time resources from all five EU agencies.	<p>Regulation (EU) 2022/2370 (1) ECDC extended mandate.</p> <p>European Parliament Resolution 2022/2076(INI).</p> <p>Regulation 2022/2371 on Serious Cross-Border Threats to Health (27) (SCBTH).</p> <p>ECDC Single Programming Document (SPD) 2024–2026, – Work Programme 2024 (Priority 4 for 2024), Strategic Objective 3, Action Area 3.1.</p>
2	A One Health EU-wide research and development agenda, to close knowledge gaps in areas such as AMR, zoonoses, and effects of climate change on infectious diseases, developed.	<p>Through identification of knowledge gaps, prioritisation and development of an EU/EEA One Health research agenda in collaboration with other EU agencies (e.g., innovative methods for surveillance, like wastewater surveillance).</p> <p>Through the continuation of ECDC's contribution to the European Climate and Health Observatory partnership.</p> <p>Through the coordination and strengthening of relevant networks.</p> <p>Through consultation and cooperation with relevant EU networks coordinated by ECDC, EFSA, EEA or other agencies.</p>	Resources (human and financial) from DPR, PHF, SMS, and other ECDC entities as needed, and through collaboration with other EU agencies, the Joint Research Centre (JRC), DG-SANTE, the European Climate and Health Observatory, Copernicus Climate Change Service, and the WHO European Centre for Environment and Health.	<p>Regulation 2022/2371 on Serious Cross Border Threats to Health (27) (SCBTH).</p> <p>Urgent priorities for action N.1 and N.2 in the Joint statement 'Cross-Agency Knowledge for One Health action' (2023).</p> <p>ECDC SPD 2024–2026, Work programme 2024: Action Area 1.3.</p>
3	A One Health approach implemented for joint risk assessment and scientific advice, developed in collaboration between the EU agencies.	Through the establishment of common standard operating procedures, with clear criteria for initiation, roles, responsibilities, communication flow and clearance process, developed in collaboration between the EU agencies.	Resources (human and financial) from DPR, PHF, SMS, and other ECDC entities as needed, and through collaboration with other EU agencies and DG-SANTE.	<p>Regulation 2022/2371 on Serious Cross Border Threats to Health (Art 20), (5) (SCBTH).</p> <p>Urgent priorities for action N.2 in the Joint statement 'Cross-</p>

No	Strategic One Health objectives	Ways and means	Resource needs	References
		<p>Through the coordination and strengthening of relevant networks.</p> <p>Through consultation and cooperation with relevant EU networks coordinated by ECDC, EFSA, EEA or other agencies.</p> <p>Through the production of guidelines for the assessment of the impact of climate change on infectious diseases.</p> <p>Capacities for producing joint scientific advice or risk assessments can be developed through training activities (link to Objective 5).</p>		<p>Agency Knowledge for One Health action' (2023).</p> <p>ECDC SPD 2024–2026 Work Programme 2024: Action Area 2.2.</p>
4	<p>A One Health intersectoral coordination mechanism established at national level in all Member States, facilitating communication and collaboration across sectors (animal, human and environmental) for prevention, preparedness, and response to emergency health crises.</p>	<p>Through ECDC Article 7 and Article 8 country visits, assessing prevention, preparedness, and response plans.</p> <p>Through communication from ECDC to Member States via the Health Security Committee, Advisory Forum and Management Board.</p> <p>Through guidance documents and examples of good practices on One Health coordination in the Member States.</p> <p>Through a monitoring and evaluation mechanism to assess the progress of the Member States.</p> <p>Through establishment of communities of practice.</p> <p>Through consultation and cooperation with relevant EU networks, coordinated by ECDC, EFSA, EEA or other agencies.</p> <p>Through guidelines for intersectoral and multidisciplinary outbreak investigation.</p> <p>Through increasing awareness of the establishment of intersectoral communication and coordination mechanisms within the country.</p> <p>Through the organisation of joint simulation exercises.</p> <p>Through training and guidelines on One Health (including the environmental crisis) in the EU Health Task Force.</p>	<p>DPR and PHF staff allocated to the Article 8 country visits.</p> <p>External experts to implement dedicated projects.</p> <p>The effort and resource allocation required to establish such mechanisms is likely to vary between Member States.</p>	<p>Regulation 2022/2371 on Serious Cross Border Threats to Health (12) (SCBTH).</p> <p>Urgent priority for action N.2 in the Joint statement 'Cross-Agency Knowledge for One Health action' (2023).</p> <p>ECDC SPD 2024–2026 – Work Programme 2024: Action Area 3.2.</p>
5	<p>One Health intersectoral integrated surveillance¹ and early warning systems</p>	<p>Through guidance documents on One Health integrated surveillance in the Member States.</p>	<p>Resources (human and financial) from DPR, PHF, SMS, and other ECDC entities as needed, and through collaboration with</p>	<p>Regulation 2022/2371 on Serious Cross Border Threats to Health (Art 14, 18.4 and 11.2) (SCBTH).</p>

¹ A system or mechanism of coordination, ensuring that epidemiological, laboratory and clinical data, from human, animal, vectors, and environmental sources, can be collated, analysed and interpreted in an integrated fashion (in terms of time and geography), with the aim of guiding action for the prevention and control of human, animal or plant diseases, including protection of the related ecosystems.

No	Strategic One Health objectives	Ways and means	Resource needs	References
	<p>established at national level in all Member States.</p>	<p>Through the establishment of cross-sectoral European Reference Laboratories for selected food-borne and zoonotic diseases to support diagnostic method harmonisations.</p> <p>Through sharing examples of good practices on integrated surveillance systems or interoperability and data sharing among sectors.</p> <p>Capacities for integrated surveillance and early warning activities, including epidemic intelligence, can be developed through training activities (link to objective 5).</p> <p>Through the contribution of ECDC to preparatory work for EU legislation or implementing acts.</p> <p>Through consultation and cooperation with relevant EU networks coordinated by ECDC, EFSA, EEA or other agencies.</p>	<p>other EU agencies and DG-SANTE.</p> <p>The effort and resource allocation required to deliver such systems is likely to vary between Member States.</p>	<p>ECDC SPD 2024–2026 – Work Programme 2024: Action Area 2.1. and 2.3.</p>
6	<p>One Health capabilities and workforce competence built and strengthened at EU/EEA and Member State level, enabling One Health collaboration and crisis response.</p>	<p>Through ECDC's contribution to simulation exercises in a One Health context, in collaboration with the European Commission, Member States and other EU agencies, and ECDC involvement in One Health training activities.</p> <p>Through establishment of One Health communities of practice.</p>	<p>Resources (human and financial) from DPR, PHF, SMS, and other ECDC entities as needed, and through collaboration with other EU agencies and DG-SANTE.</p>	<p>Regulation 2022/2371 for Serious Cross-Border Threats to Health (Art 11) (SCBTH).</p> <p>ECDC SPD 2024–2026 – Work Programme 2024: Action Areas 3.3. and 4.2.</p>

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Annex 1. Interdependency

One Health Theory of Change, from the One Health High Level Expert Panel (OHHLEP)

The OHHLEP Theory of Change (ToC) [4] is closely aligned to the aims and objectives of the global One Health Joint Plan of Action [21] developed by the Quadripartite Partners (FAO, UNEP, WHO and WOA). Both initiatives have a similar goal/impact: to help create a world better able to prevent, predict, detect, and respond to health threats and improve the health of humans, animals, plants, and the environment, while contributing to sustainable development.

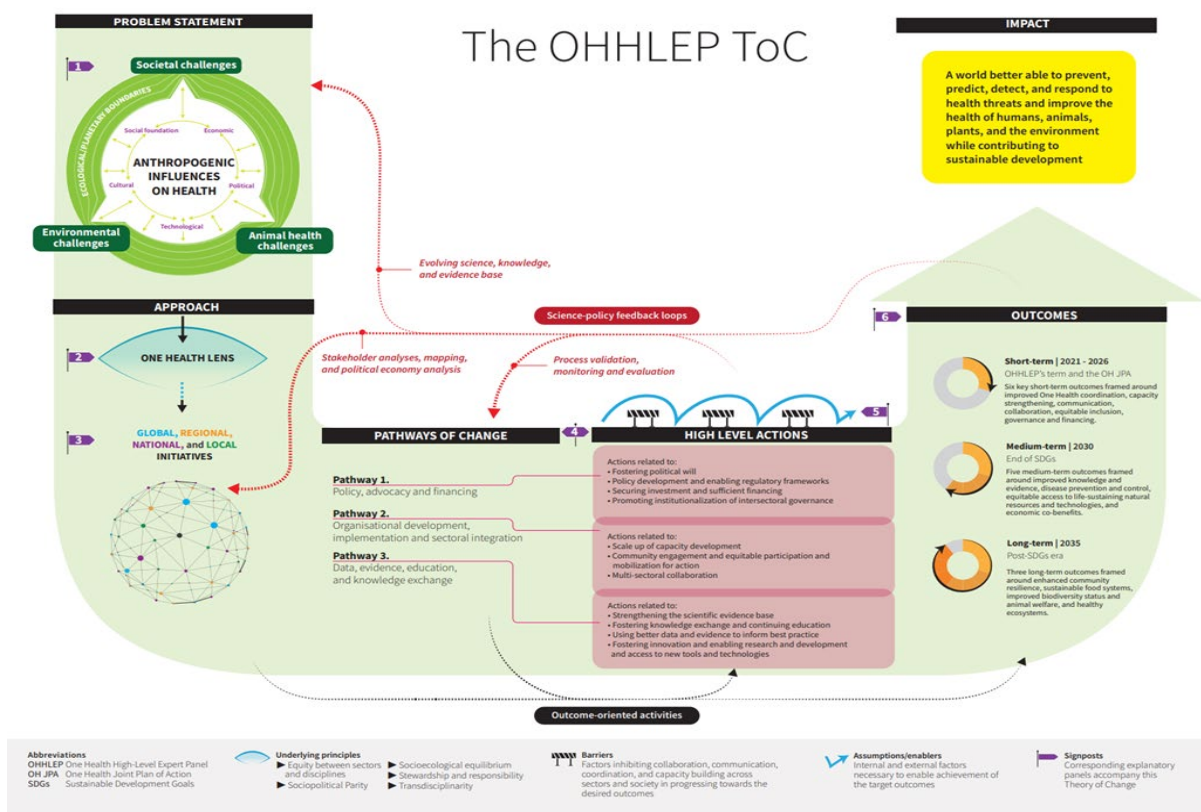
The problem statement covers the animal health, environmental and societal challenges. These challenges pertain to human, organisational, and socio-economic behaviour, customs, and norms. Some examples of these challenges are inequalities; poor understanding of health risks and mitigation measures; or inappropriate use of medicines (e.g. antimicrobials) and other health technologies.

'One Health' is defined as an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals and ecosystems. It recognises that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent. The approach mobilises multiple sectors, disciplines and communities at varying levels of society. This enables them to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, and action on climate change and sustainable development.

The key underlying principles include:

1. Equity between sectors and disciplines;
2. Sociopolitical and multicultural parity (the doctrine that all people are equal and deserve equal rights and opportunities) and inclusion and engagement of communities and marginalised voices;
3. Socio-ecological equilibrium that seeks a harmonious balance between human–animal–environment interaction and acknowledging the importance of biodiversity, access to sufficient natural space and resources, and the intrinsic value of all living things within the eco-system;
4. Stewardship and the responsibility of humans to change behaviour and adopt sustainable solutions that recognise the importance of animal welfare and the integrity of the whole ecosystem, thus securing the well-being of current and future generations;
5. Multisectoral collaboration which includes all relevant disciplines, both modern and traditional forms of knowledge and a broad, representative array of perspectives.

Figure 1. The One Health High-Level Expert Panel (OHHLEP) Theory of Change



Source: OHHLEP

The extracts below from actions proposed by the Quadripartite are examples that could be regarded as relevant, feasible and effective at EU level.

In pathway 1 'Actions related to policy development, political will, enabling regulatory frameworks, equitable investments and promoting institutionalisation of intersectoral governance'.

1. Advocate for adopting a One Health approach to tackle health threats in relevant global and regional fora and their funding instruments, including:
 - prevention and health promotion-oriented focus in international collaboration and investments (e.g. the One Health Joint Plan of Action, a potential international pandemic accord negotiations process, International Health Regulations reform, WHO/World Bank Global Preparedness and Monitoring Board (GPMB), and the Pandemic Prevention, Preparedness and Response Financial Intermediary Fund);
 - adequate safeguards through improved assessment of trade-offs and co-benefits;
 - value reinforcement for integrated and sustained surveillance systems.'
2. Conduct stakeholder mapping and political economy analysis of One Health initiatives and policies and develop case studies.'
5. Establish a framework and models of One Health governance structures, legislation, and networks.'
6. Mainstream One Health into existing programmes and plans (e.g. vector-borne diseases, plans for outbreak preparedness, prevention and response) and scale up monitoring and implementation of international conventions and related protocols (e.g. Convention on Biological Diversity, Nagoya protocol on Access and Benefit Sharing, Cartagena Protocol on Biosafety)'

In pathway 2 'Actions related to implementation of One Health, including scaling up capacity development, community engagement and mobilisation for action, multisectoral coordination, collaboration and communication, and equitable integration of sectors'. Those actions which are potentially interesting for ECDC are:

3. Support the development of an overarching surveillance framework and strengthen surveillance and disease intelligence systems across the domains of human, animal and ecosystem health.'
8. Integrate the One Health concept and elements across sectors, including but not limited to:
 - key national assessment, capacity building and implementation tools;
 - equitable distribution of action plans and budgets between sectors, including wildlife and ecology, to ensure that their roles in relation to disease prevention and detection are understood and optimised;
 - workforce programmes and career pathways for One Health specialists across disciplines and sectors.'
9. Incentivise best practices for One Health operationalisation.'

In pathway 3 'Actions related to strengthening the scientific evidence base, fostering knowledge exchange, technology transfer and continuing education, using better data and evidence to inform best practice, innovation and enabling access to new tools and technologies'. Those actions which are potentially interesting for ECDC are:

6. Develop a One Health curricula for different cadres of the One Health workforce and educational materials for all age groups (across primary and secondary schools and higher education institutions) across society'.
8. Document and disseminate evidence, success stories and good practice'.
10. Utilise social science methods to monitor issues and constraints at community level for disease prevention and control to inform appropriate behavioural strategies.'

The OHHLEP Theory of Change presents a list of barriers and enablers.

Outcomes are grouped into three stages:

- Short-term (those to be reached during the Joint Plan of Action, 2021–2026)
- Medium-term (by end 2030 = end of the Sustainable Development Goals (SDG) period)
- Long-term (by end 2035 = post SDG era).

Matching the ECDC One Health Framework period, the six key short-term outcomes for improving One Health coordination, communication, collaboration, equitable inclusion, governance and financing are:

1. **Improved disease surveillance, early warning, and control across human, animal and plant health systems to minimise negative health outcomes.**
2. **Improved surveillance of emerging pathogens and monitoring of identified priority drivers.**
3. **Improved One Health coordination mechanisms to enhance collaboration, communication, and capacity building at different levels of society.**
4. Improved community engagement including marginalised groups, gender-sensitive interventions and minorities.
5. Improved One Health governance at all levels.
6. Sufficient funding in place for key One Health plans and improved coordination of global One Health financing.

While the six OHHLEP ToC outcomes are important, ECDC's scope and priorities are mainly linked to those listed as 1, 2 and 3 (highlighted in bold above).

ECDC Prevention Framework

Following the mandate established for ECDC in the Regulation 2022/2370, 'in close collaboration with Member States, the European Medicines Agency and other relevant Union bodies and Agencies, as well as with international organisations, the Centre shall develop a framework for the prevention of communicable diseases and related special health issues, including socio-economic risk factors, vaccine preventable diseases, antimicrobial resistance, health promotion, health education, health literacy and behaviour change'.

The One Health Framework should be consistent and coherent with the ECDC Prevention Framework, which refers to all communicable diseases under the ECDC mandate. While the ECDC Prevention Framework prioritises vaccine-preventable diseases (VPD) and AMR, based on the priorities stated in the Regulation, other disease areas will benefit from its application, and in the future other priority areas may be considered, depending on the burden of disease.

The vision for the ECDC Prevention Framework is the attainment of strong, effective and evidence-based prevention of communicable disease in the EU/EEA. In addition to applying expertise in epidemiology and microbiology, this will be achieved by leveraging social and behavioural sciences, health promotion, health literacy, health education, behaviour change, and taking into account socio-economic risk factors.

In the operationalisation of the Prevention Framework, there are three main objectives:

1. Develop a plan for the strengthening of prevention (through training and capacity building);
2. Facilitate exchange of knowledge, skills and experiences (through a Community of Practice);
3. Foster collaboration with external partners and stakeholders (including EMA, WHO, JRC, EFSA and the European Observatory on Health Systems and Policies).

The importance of applying social and behavioural sciences is probably one of the key aspects of convergence between One Health and Prevention. Linkages between the two areas in this field may be established during the training and capacity building (Objective 1) and, in particular, through the work of the ECDC Prevention Community of Practice (Objective 2).

The approach taken in the Prevention framework is to establish a benchmark, where ECDC acts as a 'knowledge broker', facilitating the exchange of experience among different professionals in the countries, coordinating training and capacity building initiatives in the EU, and involving countries, EU agencies, bodies, and international stakeholders for better coordination, collaboration, and efficiency. This focus on working with stakeholders at different levels and involving multiple disciplines and sectors is common between the One Health and the Prevention Frameworks.

ECDC Foresight Programme

Integrating strategic foresight into infectious disease prevention and control operations is a priority for ECDC to support preparedness and prioritisation at ECDC and in the Member States. The ECDC Foresight Programme is a cross-organisational programme that aims to make ECDC and its partners more anticipatory and resilient, by evaluating future risks and uncertainties, and building capacity into systems- and future-thinking. A key element of the programme is to identify and assess trends and drivers that shape the evolution of communicable disease threats for Europe. Different futures that may result from interactions between such 'drivers of change' and their possible trajectories towards 2040 are then explored in scenarios. Although the scenarios are not predictions, they feature a range of possible threat landscapes for ECDC's mission and operations in 2040. In this way, ECDC's Foresight programme offers anticipatory tools to make sense of complexity, uncertainty and emergence in infectious disease prevention and control.

Climate change has emerged as one of the most significant 'drivers of change' determining the future infectious disease threat landscape in the EU/EEA. The impact of climate change, the uncertainty around climate change-related future trajectories, and the interconnectedness with other important drivers of change were all considered to be very high by experts involved in ECDC's Foresight programme. Considering that climate change is such an active factor, shaping the future challenges for infectious disease prevention and control, it features prominently in all six threat scenarios for 2040 that have been developed under the Foresight programme (even though different climate change mitigation and adaptation policy and response trajectories are covered by the different scenarios).

There was a strong consensus that climate change will worsen towards 2040, no matter what is done until then. However, high uncertainty exists regarding the policies and actions that may be taken to address climate change, which can have strong consequences for infectious disease prevention and control. The alternative future trajectories considered in the Foresight programme are set out below.

- Trajectory 1: Climate change adaptation and mitigation measures remain too little and too late ('business-as-usual trajectory').
- Trajectory 2: Countries take diverging and disjointed approaches individually or in blocs.
- Trajectory 3: Strong transformation towards adapting and preparing for climate change effects.
- Trajectory 4: Full-blown, radical green transition, with a strong focus on climate change mitigation.

Climate change – and policy that aims to address this – also strongly influences (and is influenced by) other relevant drivers of change for infectious disease threats. The areas set out below have been highlighted by experts from the Foresight programme.

- Inequalities in access to healthcare: the impacts of climate change are more significant for poorer, often more vulnerable segments of society, reinforcing existing inequalities. Collaborative responses to climate change might include efforts to reduce multiple inequities, including in access to healthcare, and support social resilience.
- International migration and travel: expected climate change developments are likely to continue to drive population displacement and international migration. Isolationist responses to climate change are likely to result in increased conflict and refugees who are typically, more vulnerable. Travel is likely to become less socially acceptable or more expensive as climate change worsens.
- New distributions of wealth and influence globally: although experts noted that by 2040 climate change will have inevitably worsened no matter what is done now, the speed, the scale and the impact will depend very much on wealth and influence distributions. International cooperation, as well as actions by nations, regions, cities and private actors can significantly improve both climate change mitigation and adaptation. In contrast, nationalism and isolationism, profit-maximalisation and consumerism, and disjointed approaches will have negative impacts. The severity and timing of climate change impact will be unevenly distributed globally, which will probably influence power and wealth dynamics.
- Pressure on natural resources and ecologies: while it has largely been the exploitation of natural resources that has driven climate change, there remain optimistic paths for addressing both drivers. Climate change mitigation and restoring biodiversity and ecosystems works synergistically. Collaborative climate change mitigation efforts are likely to include reduced resource exploitation. Conversely, disjointed and isolationist climate change responses are likely to accelerate depletion of (local) resources and increased pressure on ecologies.
- Antimicrobial resistance: climate change will alter local ecologies and can lead to changing seasonality of pathogens, shifting breeding times and migration for their hosts and reservoirs. Climate change-induced vulnerability of populations and pressures on food supplies can have an impact on antimicrobial consumption and stewardship. This increases the possibility for resistant pathogens to emerge or spread to new regions.

An ECDC strategy workshop, organised by the Foresight project in 2023, aimed to develop future infectious disease threats scenarios. The exercise identified One Health as the first priority and climate change as the second.

Climate change-related challenges for infectious disease prevention and control that were identified in several of the threat scenarios include:

- Changing human-animal interfaces and interactions, with risks for pathogen (re)emergence and spill-over due to the effects of climate change, changing habitats and encroachment.
- Increased vulnerability in populations during heatwaves and post-disaster conditions.
- Increased risk of water-borne diseases due to floods/droughts and water system disruptions.
- Changing spread of infectious disease vectors and disease reservoirs as a result of urban greening, rewilding, wildlife reintroduction, etc.
- Higher incidence of food-borne diseases due to production and cold chain issues.
- Backlash against a 'nature-based' focus could lead to 'synthetic' vaccine and medicine hesitancy.
- Potential higher use of antimicrobials to combat diseases and increase food-yield.
- Possible unintended effects of geoengineering.

Annex 2. List of One Health stakeholders

The list of potential One Health stakeholders of ECDC is available here: [Potential One Health stakeholders.docx](#)

Annex 3. List of abbreviations

AMR	Antimicrobial Resistance
DCG	Director's Consultation Group
DPR	Disease Programmes
ECDC	European Centre for Disease Prevention and Control
ECHA	European Chemicals Agency
EEA	European Environment Agency
EFSA	European Food Safety Authority
EMA	European Medicines Agency
EU	European Union
FAO	United Nations Food and Agricultural Organization
JRC	Joint Research Centre
M&E	Monitoring and Evaluation
OHHLEP	One Health High Level Expert Panel
PHF	Public Health Functions
R&I	Research and Innovation
SCBTH	Serious cross-border threats to health
SDG	Sustainable Development Goal
SMS	Scientific Methods and Standards
SPD	Single Programming Document
ToC	Theory of Change
UNEP	United Nations Environment Programme
WHO	World Health Organization
WOAH	World Organisation for Animal Health.

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