

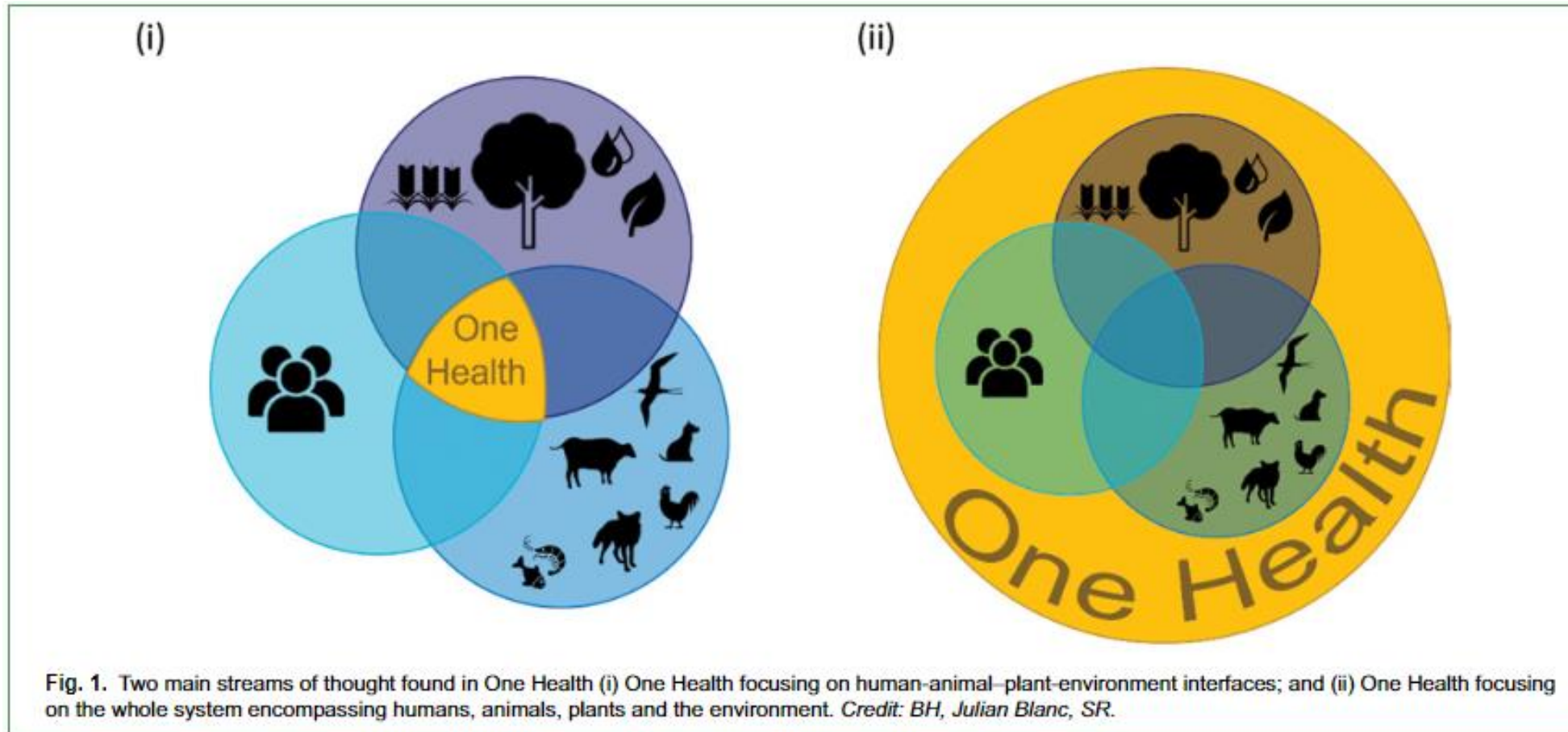


HEALTHY PEOPLE FROM THE ONE HEALTH PERSPECTIVE

Stef BRONZWAER
stef.bronzwaer@efsa.europa.eu

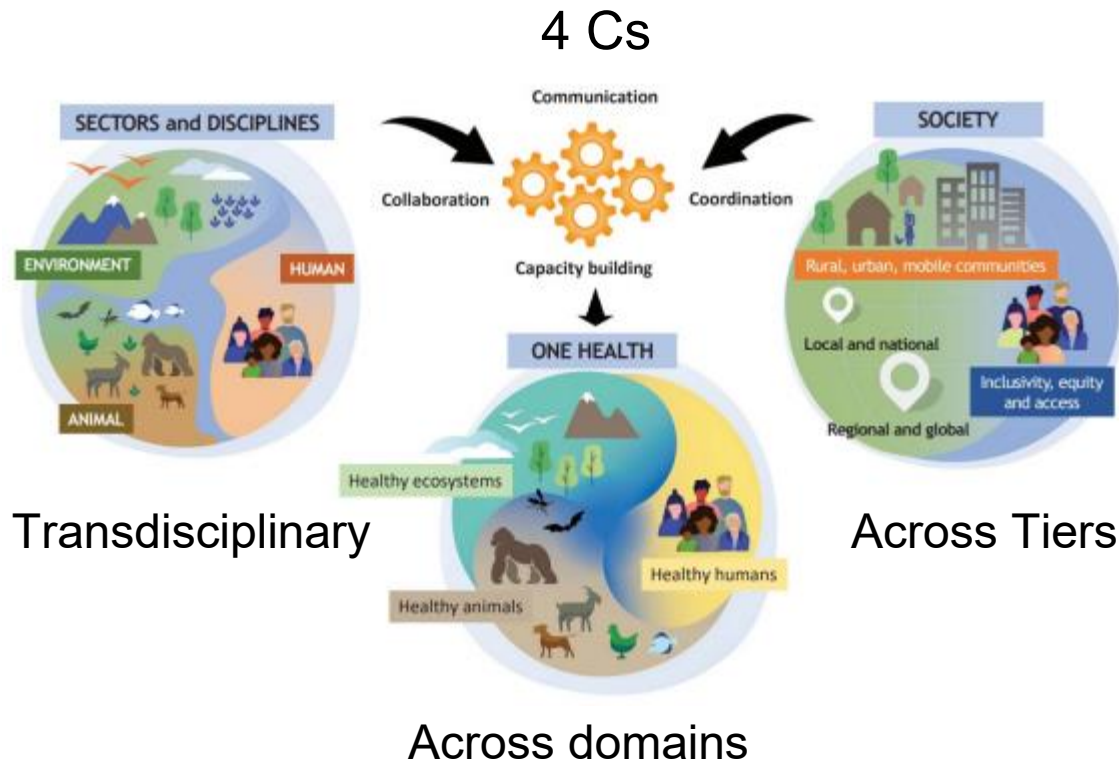
9 October 2023 – ICA webinar

WHAT IS ONE HEALTH



ONE HEALTH DEFINITION – FAO, UNEP, WHO & WOAHA

- 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 inter-dependent.



The approach mobilizes **multiple sectors, disciplines and communities** at varying levels of society 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, taking action on climate change, and contributing to sustainable development.



INCREASING BODY OF LITERATURE

- **Bibliometric analysis** showed an increasing interest for One Health in academic research.
- However, it revealed some thematic and disciplinary **shortcomings, in particular with respect to the inclusion of environmental themes and social science** insights pertaining to the implementation of One Health policies.
- The analysis indicated that there is a **need for more applicable approaches to strengthen intersectoral collaboration and knowledge sharing.**



One Health
Volume 10, December 2020, 100146



The state of One Health research across disciplines and sectors – a bibliometric analysis

[Sarah Humboldt-Dachroeden](#), [Olivier Rubin](#), [Snorre Sylvester Frid-Nielsen](#)

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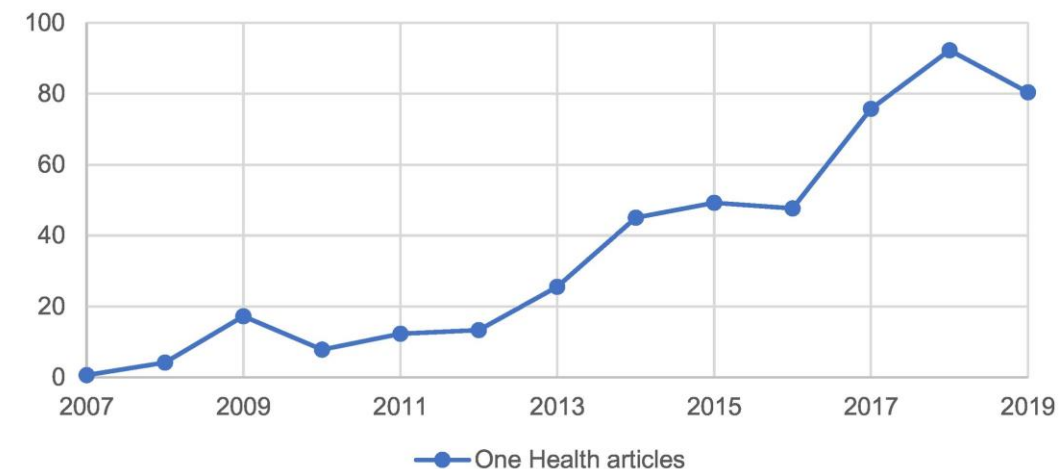
<https://doi.org/10.1016/j.onehlt.2020.100146>

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Annual scientific production



Editorial | Open Access | CC BY ND

EFSA's expertise supports One Health policy needs

Stef Bronzwaer ✉, Mirelle Geervliet, Marta Hugas, Bernhard Url

First published: 12 May 2021 | <https://doi.org/10.2903/j.efsa.2021.e190501> | Citations: 4

About the authors: Stef Bronzwaer, Research Coordinator; Mirelle Geervliet, Trainee; Marta Hugas, Scientist; Bernhard Url, Executive Director

Regulation (EC) No 178/2002 - mission European Food Safety Authority:

*The Authority shall contribute to a high level of protection of **human life and health**, and in this respect take account of **animal health and welfare, plant health and the environment ...***



EFSA OH – STORY MAPS – DASHBOARDS

HTTPS://WWW.EFSA.EUROPA.EU/EN/RESOURCES/DATA-COLLECTION-ZOONOSES

Reporting tools

- [Excel mapping tools for 2022 zoonoses and AMR data reporting](#)
- [Instructions on how to use the Excel mapping tools can be found in the User manual for mapping Member State zoonoses standard terminology to EFSA standard terminology for information derived from the year 2018](#)

The catalogues extracted in the Excel format

- [Catalogues for 2022 zoonoses data reporting](#)
- [The 2022 mapping between the ZOO_CAT_MATRIX and the FoodEx2 and examples of prevalence data reported in SSD2 format](#)

Links to the annual reports

- The European Union One Health Zoonoses Report: [2011](#) | [2012](#) | [2013](#) | [2014](#) | [2015](#) | [2016](#) | [2017](#) | [2018](#) | [2019](#) | [2020](#) | [2021](#)
- EU summary report on AMR in zoonotic and indicator bacteria from humans, animals and food: [2011](#) | [2012](#) | [2013](#) | [2014](#) | [2015](#) | [2016](#) | [2017](#) | [2018](#) | [2019](#) | [2021](#)
- [National zoonoses country reports](#)

Dashboards and story maps

Foodborne outbreaks

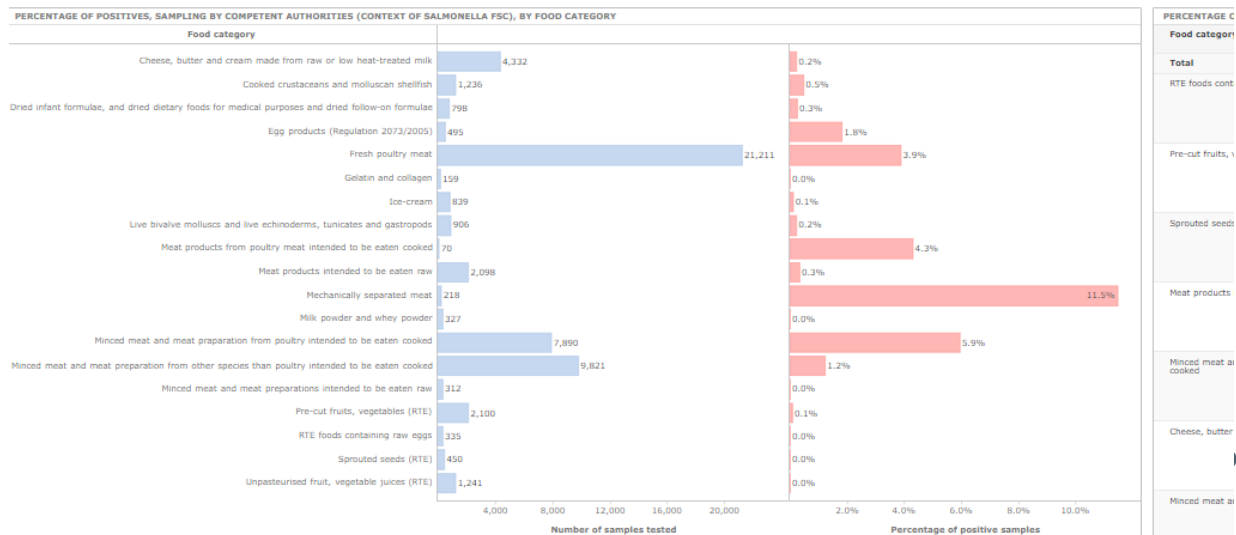
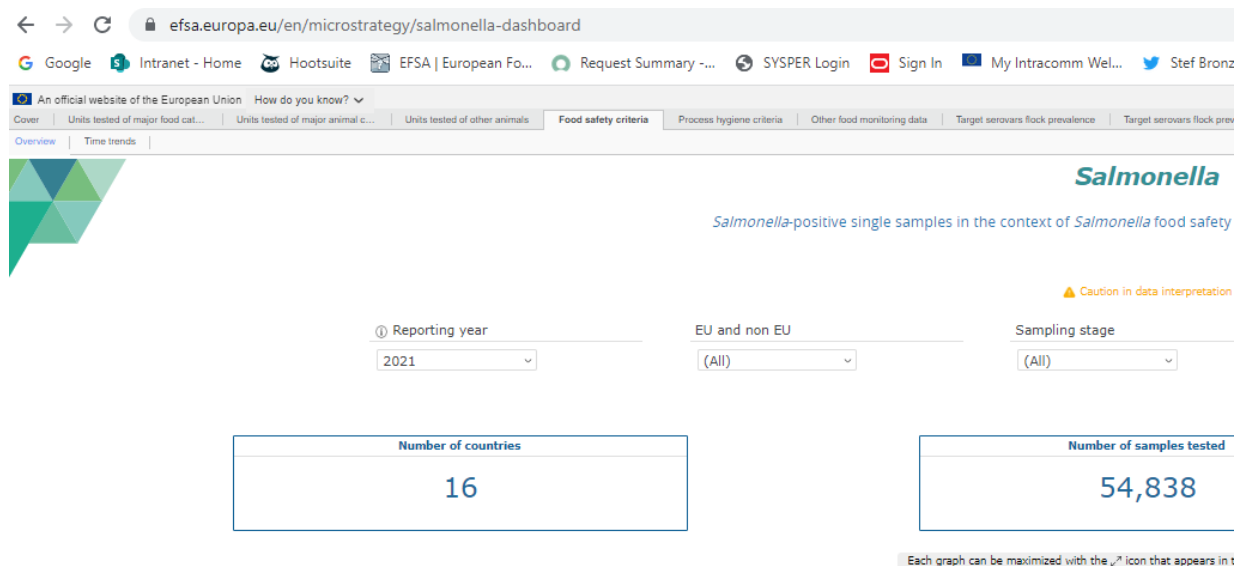
- [Foodborne outbreaks dashboard](#)
- [Foodborne outbreaks story map](#)

Prevalence

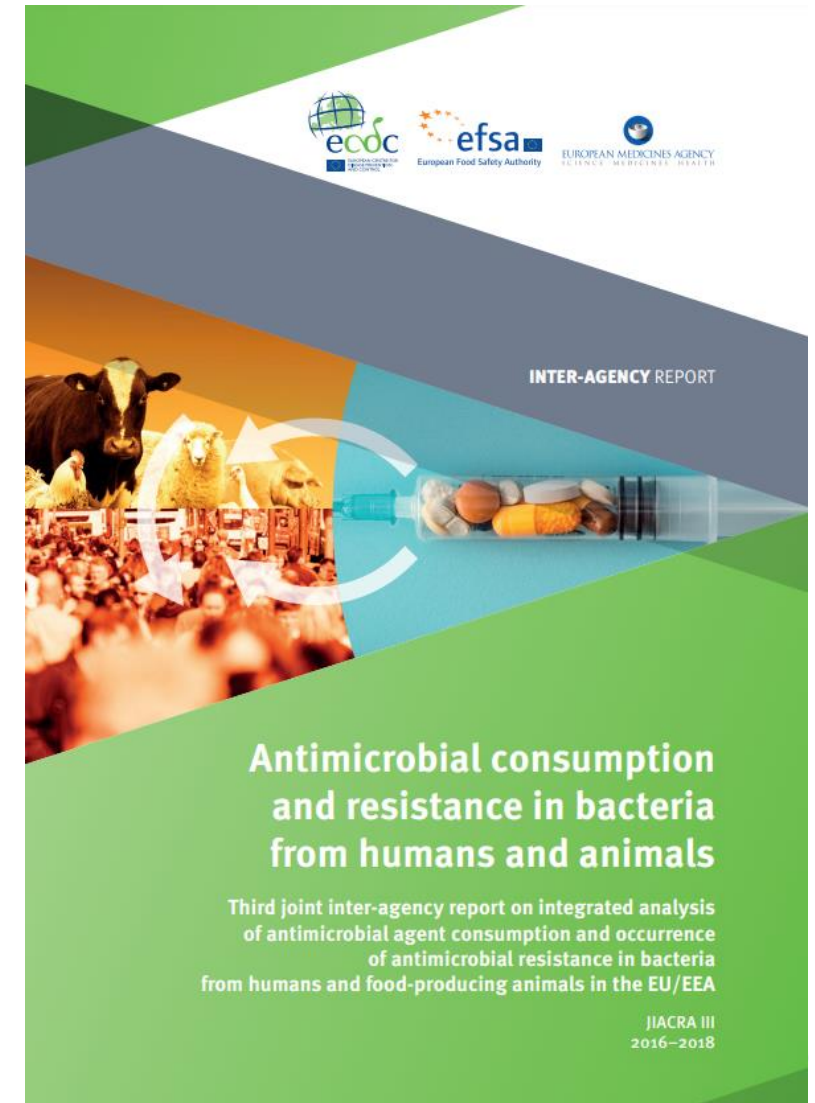
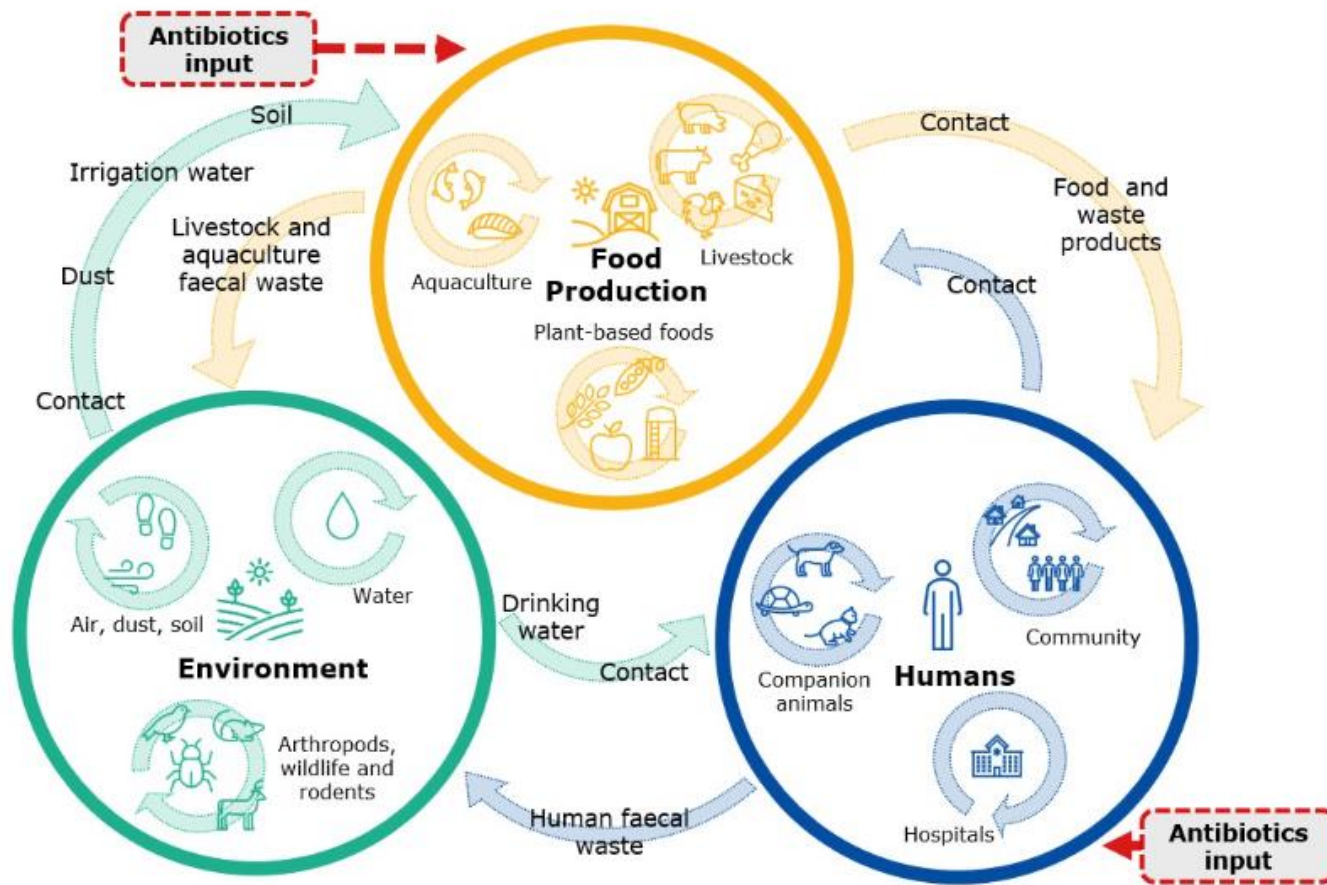
- [Salmonella dashboard](#)
- [Salmonella story map](#)
- [Listeria dashboard](#)
- [Listeria monocytogenes story map](#)
- [Campylobacter dashboard](#)
- [Campylobacter story map](#)

Antimicrobial resistance

- [Monitoring antimicrobial resistance](#)
- [Monitoring AMR in Escherichia coli](#)
- [Dashboard on Indicators of antimicrobial resistance](#)



ANTIMICROBIAL RESISTANCE (AMR)



CHANGING ENVIRONMENT - CIRCULARITY



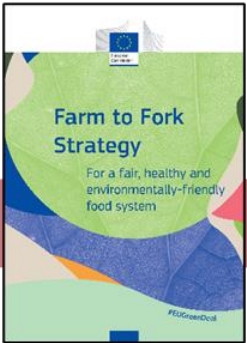
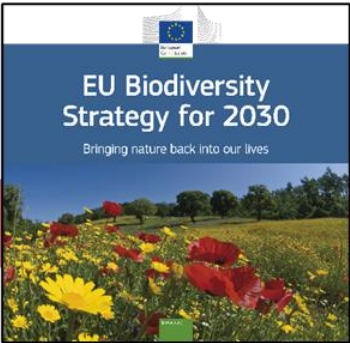
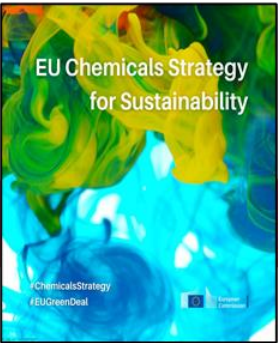
Microplastics environmental concern since long - also possible food safety risk.

Circular economy / urban farming, may drive risks.
For example:

- a. Reusage Waste Water
- b. Urban agriculture



GREEN DEAL – TOWARDS ONE HEALTH ...



PARC

400 M €



Biodiv+

800 M €



SFS

764 M €



PAHW

360 M €



OH
AMR

400 M €



ERA4H

Pand.
Prep.

500? M €



ONE CONFERENCE 2022



ONE CONFERENCE



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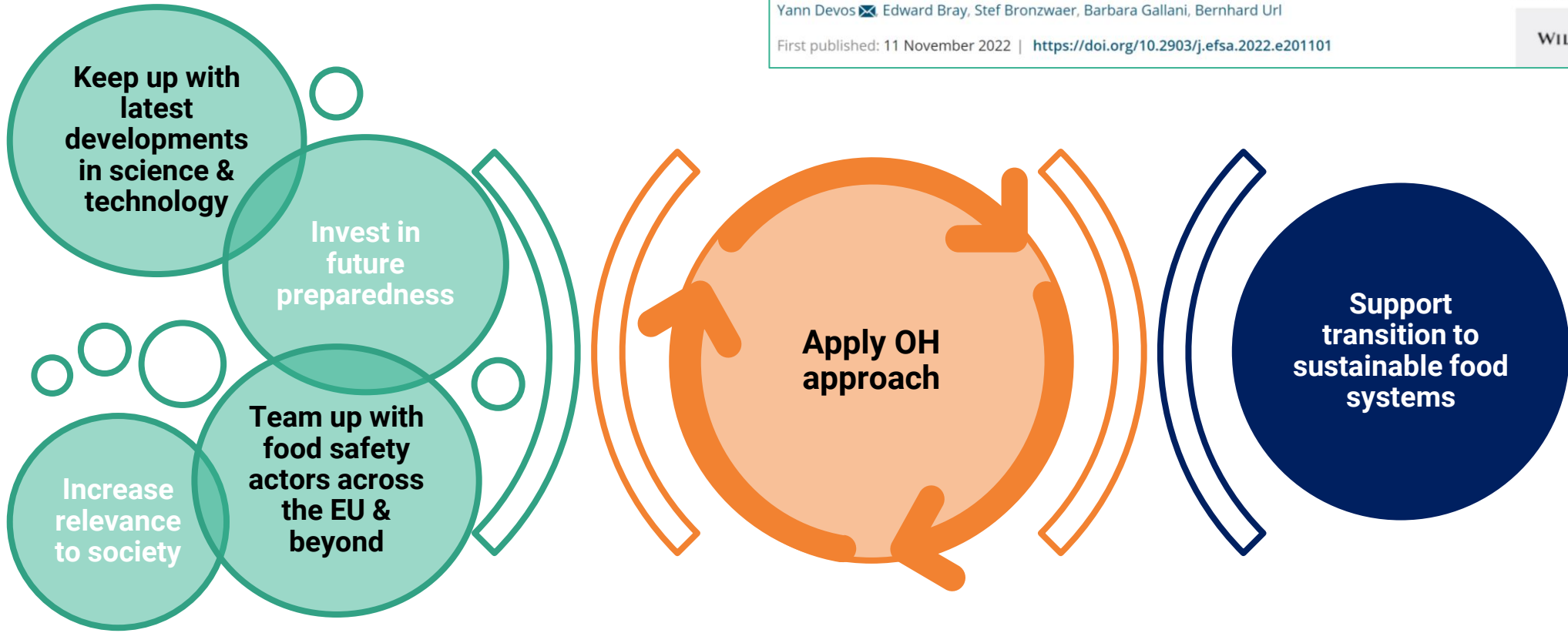
Advancing food safety: strategic recommendations from the 'ONE – Health, Environment & Society – Conference 2022'

Yann Devos ✉, Edward Bray, Stef Bronzwaer, Barbara Gallani, Bernhard Url

First published: 11 November 2022 | <https://doi.org/10.2903/j.efsa.2022.e201101>

Advertisement

WILEY



Safe food

One Health (OH)

Sustainable food



ONE HEALTH RECOMMENDATIONS

- EU Agencies are knowledge centres, bringing together know-how to inform policy makers.
- EU Agencies that have traditionally dealt with aspects of human health, animal health, plant health and ecosystem health in silos, now need to take a broader perspective and move towards a One Health (OH) approach.
- It is urgent to define transdisciplinary research needs and formulate a One Health research agenda. This would be facilitated by establishing transdisciplinary One Health R&I governance, both at national and EU levels.
- Involvement of EU Agencies in the programming of the EU Research Framework programmes is beneficial, because of their regulatory science perspective, their expertise and current or future tasks on research topics.
- It is encouraging that EU Agencies have committed to establish a cross-agency task force on One Health.



Follow-up paper, co-authored by 5 Agencies, Commission and the EP



OBJECTIVES CROSS-AGENCY TASK FORCE ONE HEALTH



Strategic coordination

- Common priorities One Health
- Inter-agency statement on OH



Research coordination

- Formulate common research needs
- Engage with research agenda setters



Stakeholder engagement

- Joint engagement with stakeholders
- Support OH plans from MS
- Joint events



Joint activities

- Sharing good practice
- Build OH capacity
- Support sustainability

JOINT MANDATE - ECDC, ECHA, EEA, EFSA & EMA

Impact of the use of azole fungicides other than as human medicines on the development of azole-resistant *Aspergillus spp.*

Joint EC Mandate

Overall coordination by EFSA

Deadline interagency report: July 2024



European Environment Agency



AZOLE FUNGICIDES



Health issue: infection in human with *Aspergillus spp.* resistant to treatment with azoles (ECDC, EMA)



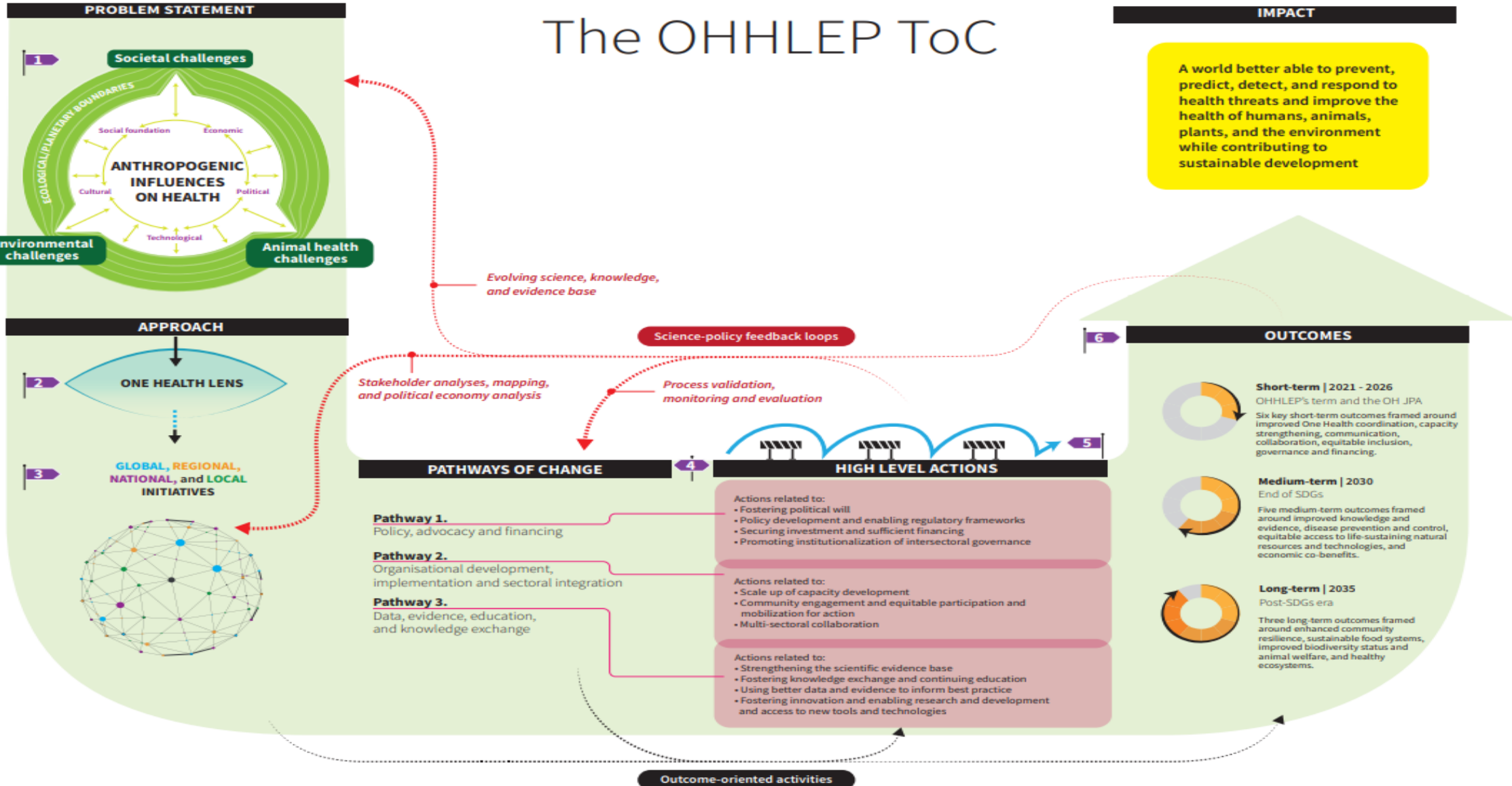
Use of azoles in the environment:

- Plant protection products (EFSA)
- Biocides (ECHA)
- Industrial chemicals (ECHA)
- Veterinary medicines (EMA)

OH THEORY OF CHANGE

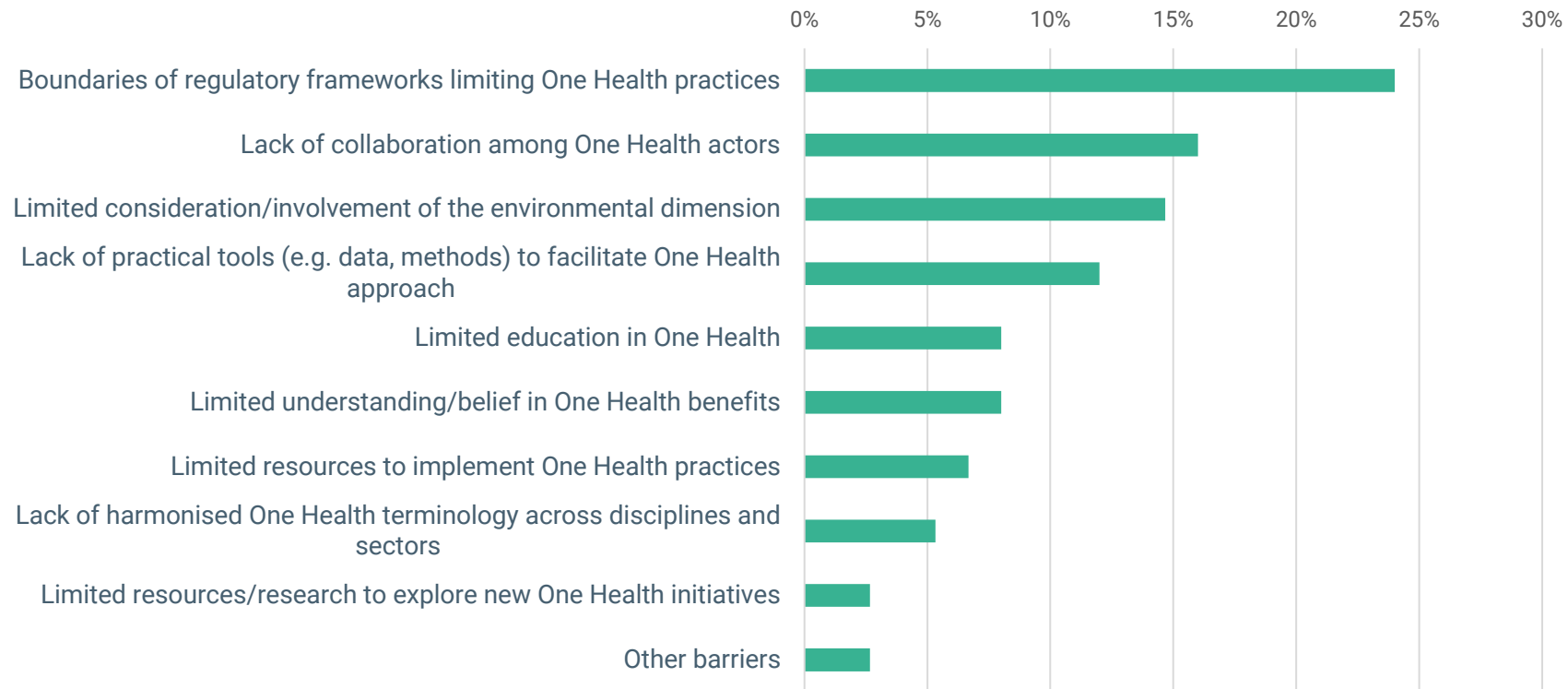
[HTTPS://WWW.WHO.INT/PUBLICATIONS/M/ITEM/ONE-HEALTH-THEORY-OF-CHANGE](https://www.who.int/publications/m/item/one-health-theory-of-change)

The OHHLEP ToC



MAIN OH BARRIERS

Barriers to the One Health approach



MAIN OH BARRIERS

Barriers	What it means
Boundaries of regulatory frameworks	<ul style="list-style-type: none"> - Siloed regulatory frameworks and separate mandates - Limitations in data exchange - Challenging to integrate food, sustainability & environmental risk assessment (ERA)
Lack of collaboration among One Health actors	<ul style="list-style-type: none"> - Lack of prioritization and unified view - Siloes among scientific disciplines
Limited consideration of environment	<ul style="list-style-type: none"> - Limited provisions for ERA - Limited data and research on the role of environment on health
Lack of practical tools (e.g. data, methods)	<ul style="list-style-type: none"> - Incomplete harmonisation on methodologies - Lack of expertise (tools and data models) on ERA - We lack joint resource pools, aligned communication practices
Limited education in One Health	<ul style="list-style-type: none"> - Rarely included in academia curriculum - Siloed approach to OH education
Limited understanding/belief in One Health benefits	<ul style="list-style-type: none"> - Overcomplex topic and often anthropogenically focus - Often perceived as buzzword, lack of planning of practical actions on OH
Limited resources to implement	<ul style="list-style-type: none"> - Lack of resources allocated to OH (also at national level, e.g. in relation to monitoring)
Lack of harmonised One Health terminology	<ul style="list-style-type: none"> - Each agency uses own "jargon" and terminology (stemming from regulation)

ICA RECTORS AND DEANS FORUM 2023 - EXPECTED OUTCOMES

The ICA Rectors and Deans Forum will address the One Health challenge for life science universities addressing transdisciplinary co-operation within the university and beyond for research and policy development.

Secondly to consider the development of the mindset of our graduates for a one health world through innovation in the degree programmes offered.

The delegates will take back to their universities their reflections on:

- life science universities should be addressing the issue of One Health (in research, education and societal engagement)
- the opportunities to apply for grant applications on the One Health topic



BIG FUNDING OPPORTUNITIES

- EU4Health https://health.ec.europa.eu/funding/eu4health-programme-2021-2027-vision-healthier-european-union_en
- Horizon Europe https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en
- COST Action Programme <https://www.cost.eu/>
- FOOD2030 (pathways) https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/food-systems/food-2030_en
- European Partnerships (e.g. OHAMR)
- Erasmus (e.g. IDOH <https://www.infectious-diseases-one-health.eu/>)

Overview on EFSA Research Platform <https://www.efsa.europa.eu/en/engage/research-platform>



ONE HEALTH CAPACITY BUILDING

Network for Ecohealth and One Health (NEOH)

- Teaching for **core competencies**, and not only for **knowledge**, is key in One Health curricula.
- The success of any One Health framework depends on **adoption from local to global scales**, underpinned by appropriate access to resources and knowledge ([Lee and Brumme, 2013](#)).
- Many educational institutions are now engaging with One Health but are **challenged by historic structures and learning outcomes** that may not be easily modified to deliver competency-based skills.
- [Togami et al., \(2018\)](#) addressed this with a step-by-step approach for academic program administrators.

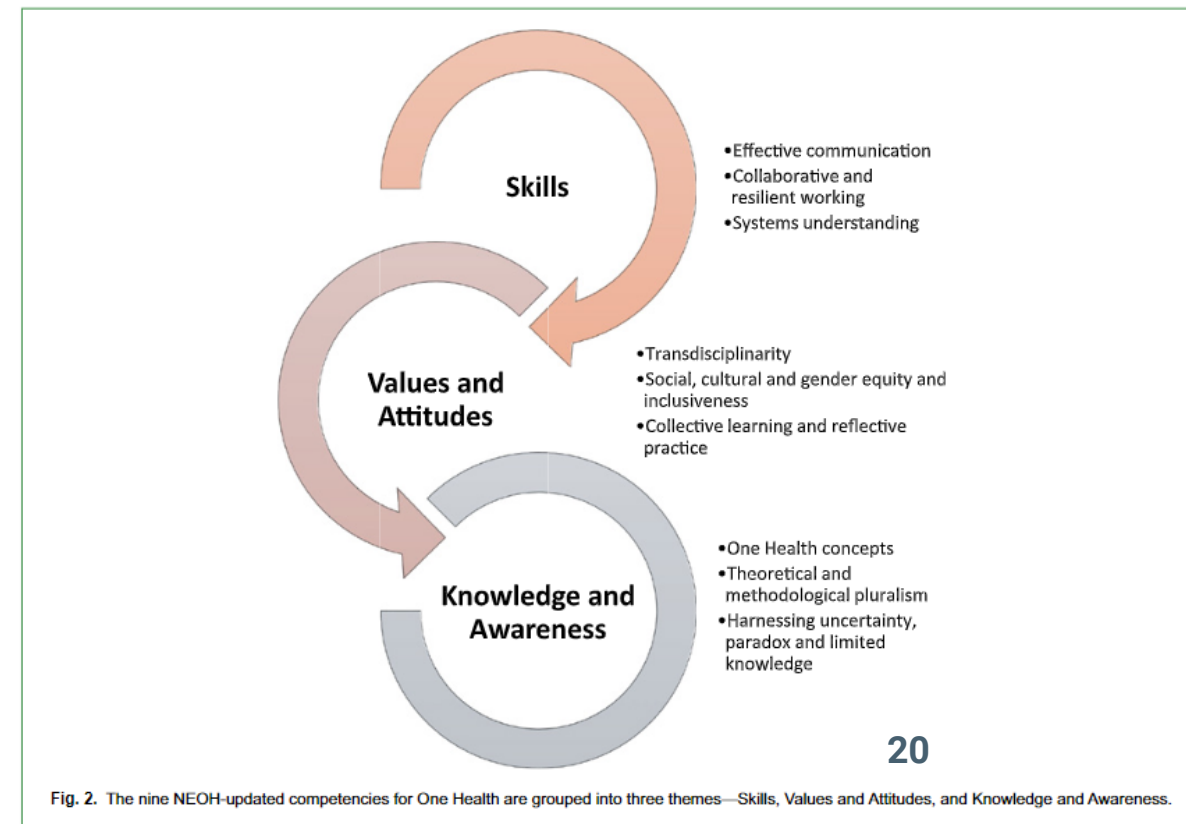
Laing et al.
CABI One Health (2023)
<https://doi.org/10.1079/cabonehealth.2023.0002>

 CABI One Health

REVIEW

OPEN ACCESS

Advancing One Health: Updated core competencies



CORE COMPETENCIES IN ONE HEALTH EDUCATION: WHAT ARE WE MISSING?

Eri Togami, et al., 2018.

<https://nam.edu/wp-content/uploads/2018/06/Core-Competencies-in-One-Health-Education-final.pdf>

Recommendations

- Clearly **state core competencies**, including proficiency in at least one health science
- Educate future professionals in the One Health arena in disciplines that are **currently well represented, as well as disciplines that are currently not well represented**
- Continue to focus on **practical and applied** training
- Emphasize **communication** in One Health education – coordination and collaboration are essential to the One Health approach

A Step-by-Step Approach to Applying One Health Core Competencies

Suggestions for Academic Program Administrators

- Step 1 Understand the benefits and challenges of competency-based education.**
 - If not already, become familiar with the [basics](#) of competency-based education, the [development process](#) of the competency model for the master of public health degree, and [previous efforts](#) regarding One Health core competencies, as well as other references.
- Step 2 Evaluate and catalogue the objectives of your academic degree program.**
- Step 3 Review the curriculum structure of your program and the list of core competencies, if available.**
 - Compare them with the One Health competency domains, as well as subdomains and competency examples from past initiatives, such as the [US Agency for International Development RESPOND Initiative's One Health Core Competency Domains, Subdomains, and Competency Examples](#).
 - Consider incorporating the core competencies and skill sets suggested above.
- Step 4 Consider adding missing disciplines and skill sets to your existing program.**
 - Include key focus areas in introductory courses to orient students to One Health early in the curriculum.
 - Identify strengths and weaknesses of your program, in relation to core competencies.
 - Add guest lectures for gaps in faculty expertise.
- Step 5 Make the core competencies of your program publicly visible.**
 - Make the core competencies available on your website and in recruiting materials for the benefit of both prospective students and employers of your graduates.
- Step 6 Solicit feedback from students, graduates, faculty, and alumni to continue revising and optimizing core competencies and associated curricular offerings.**
 - Consider a continuous quality improvement plan or other regular systematic appraisal.
 - Determine a process by which to incorporate feedback, improvement, and innovation into the curriculum.



ONE HEALTH EJP: KEY FACTS

- **European Joint Programme** Co-fund under Horizon 2020, project started in January 2018 until September 2023.
- Coordination Team: [ANSES](#), France
Scientific Coordinator: [Sciensano](#), Belgium.
- 44 partners across Europe PH/AH/FS
- Total cost €90M, **50%** EU co-funded.
- 31 Joint **Research / Integrative** Projects.
- **Education & Training** activities:
 - 17 PhD students,
 - 40+ Short Term Missions, Workshops, Summer Schools and Continuing Professional Development modules.



5 YEAR PROJECT



HORIZON 2020
50% CO-FUNDED
€ 90 MILLION



44 PARTNERS
ACROSS EUROPE





COURTESY OHEJP

- Universities are now including **One Health in undergraduate and postgraduate degree programmes**, and some offer One Health focused degrees.
- One Health is now **integrated into the overarching strategies of many universities**. Many universities now have also One Health institutes and societies.
- A number of universities are **teaching medics, vets, allied professionals and researchers together**.
- A number of **funding bodies are actively promoting One Health**.
- **EU funding opportunities** acknowledge and include One Health actions, e.g. EU4Health, Horizon Europe
- OH approach is seen as an overarching, cross cutting approach across EU policies, so **we can expect additional funding opportunities** supporting cross-sectoral collaboration (R&I, coordination, synergies across sectors)
- Better **models for integrating One Health education and training** need to be developed.
- One Health education and training needs to be better **integrated into medical, veterinary and science curricula**.
- ECDC, through the “Mediterranean and Black Sea Programme for Intervention Epidemiology Training (**MediPIET**)” and the “Fellowship Programme in field epidemiology path (**EPIET**) and public health microbiology path (**EUPHEM**)” has implemented One Health across modules in the curriculum of each of these programmes
<https://www.ecdc.europa.eu/en/news-events/one-health-and-vector-borne-diseases-module>

FELLOWSHIP PROGRAMME

EU-FORA – The European Food Risk Assessment Fellowship Programme



The European Food Risk Assessment (EU-FORA) Fellowship Programme is a key initiative for ensuring preparedness for future risk analysis needs. The programme keeps evolving based on six years of experience, the implementation of 94 work programmes, and the participation of more than 70 supervisors from 40 organisations in 16 different EU Member States and the UK.

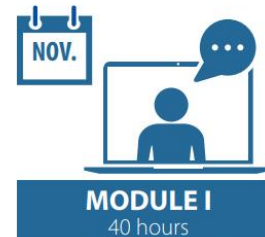
- Offering a work programme to a fellow from another Article 36 organisation.

and / or

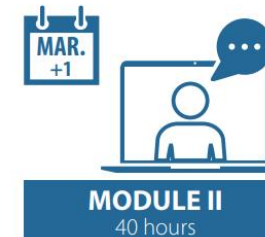
- Identifying among their staff a fellow to be trained by a partnering organisation (hosting site);

Training

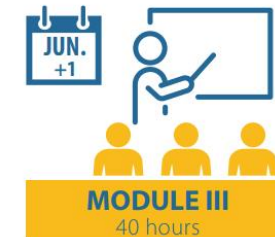
- ▶ Training is an essential part of the EU-FORA programme.
- ▶ At the summer workshop and induction training, fellows meet and exchange experiences while being introduced to the topics they will tackle over the coming year.
- ▶ Throughout the programme, fellows have the opportunity to follow seminars – physically and remotely – on topics such as risk assessment, emerging risks, risk communication or data collection.



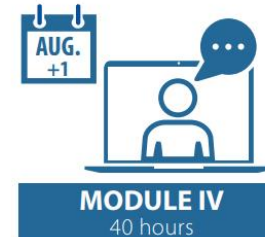
Risk assessment of other food areas
GMOs, Plant Health, AHAW, Nutrition, ERA and Regulated Products.



Emerging risks in food risk assessment



Risk communication and crisis response



Data collection and reporting



Courtesy from Peter Sousa Hoejskov

Technical Officer - Food Safety & Zoonotic Diseases

World Health Organization - Regional Office for Europe

- In Kazakhstan, WHO recently organized a *2-day event on integration of "One Health" educational materials into the training program of specialists of medical educational institutions of Kazakhstan.*
- The event included presentations from representatives from the **regional Quadripartite One Health Coordination Mechanism** and discussions on curriculum integration.
- Medical university delegates emphasized the need for **theoretical** and **practical** training in applying One Health principles for their students.
- However, the universities also **highlighted the need for additional capacity building for teachers and research grant opportunities** in operationalizing the One Health approach.

OH JOINT PLAN OF ACTION – TRAINING PROGRAMMES

Action 6.4. Create an interoperable One Health academic and in-service training programmes for environmental, medical, agricultural and veterinary sector professionals

6.4.3 Develop an interoperable One Health training course (FTP-WEBE) for in-service professionals – a complement to the Field Epidemiology Training Programme (FETP), Field Epidemiology Training Programme for Veterinarians (FETPV) and Field Epidemiology and Laboratory Training Programme (FELTP) – targeting professionals in ministries responsible for natural resource management (wildlife, biodiversity, ecosystems, environment), climate and other environmental issues

6.4.4 Develop and ensure the inclusion of training for in-service medical, public health and veterinary professionals on the importance of and interlinkages between biodiversity conservation, links between health and the environment, how environmental destruction contributes to disease emergence, and the importance of integrating the environment sector into One Health collaborations

6.4.5 Ensure that systems thinking is a core module for academic and in-service One Health professionals

6.4.6 Support the development of core modules on environment, biodiversity and ecosystem health in the medical, veterinary and public health academic curricula and research agendas

6.4.7 Support faculty training and the development of core modules on public health in environmental academic curricula

6.4.8 Develop a One Health introductory course that can be delivered simultaneously to in-service professionals from all One Health sectors (health, animal health, environment) and serves as a prerequisite to FETP, FETPV and FTP-WEBE training

<https://www.who.int/publications/i/item/9789240059139>



OH JOINT PLAN OF ACTION – TRAINING PROGRAMMES

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- Interoperable environmental sector One Health training modules and course developed
- Interoperable environmental sector One Health training delivered on biodiversity, ecosystems and wildlife
- Environment sector professionals understand how to contribute to One Health at national and subnational level
- Environment sector has the capacity to influence One Health policy and identify and implement environmental sector priorities as part of national and subnational One Health programmes
- National One Health policies and priorities reflect the mandates and interests of environment ministries and are expanded beyond zoonoses, AMR and food safety

AT 6, action 4

- FT-WEBE and FETP
- FETPV and In-Service Applied Veterinary Epidemiology Training (ISAVET)
- Needs Assessment and impact assessment tools, for example for national wildlife health programmes and country assessments of environmental health services (currently being piloted)
- FAO Virtual Learning Center training courses
- Introductory One Health Training course (7 technical modules) – FAO Regional Office for Asia and the Pacific Virtual Learning Center
- Global Framework for Transboundary Animal Diseases (GF-TADs)
- FAO manuals on highly pathogenic avian influenza (FAO, 2013a; 2013b; FAO and OIE, 2008), bats (FAO, 2011b) and other technical subjects (see, for example, FAO, 2019b; 2021e; 2021f)
- WHO/WOAH One Health workforce initiative
- WOAH/OIE National Focal Point for Wildlife training cycles & manuals
- **The Tripartite One Health FETP Competency Framework**



TRIPARTITE ONE HEALTH FETP COMPETENCY FRAMEWORK



- No internationally accepted **competencies for epidemiologists**
- Graduates with varying competence and the dilution of the reputation of Field Epidemiology Training Programmes (FETP)
- WHO, FAO and WOAHA **developed field epidemiology competencies** in a **One Health context** for use by countries and regions
- Define **One Health competencies** fundamental to field epidemiology in all sectors
- Planning / reviewing a One Health FETP at the **frontline, intermediate** and/or **advanced** levels
- Supplemental guidance for **mentorship, evaluation** and certification, and **continuing education**



OVERVIEW OF CAPACITY BUILDING OPPORTUNITIES IN “ONE HEALTH”, INTERNATIONALLY AND WITH FOCUS ON AFRICA

[A desk top study](#) by GIZ in 2022 including a list with links to different types of capacity building opportunities, including webinars, certificate courses, MSc and PhD programs

- Identify gaps, align academic and practical/implementation
- Consider mechanisms to build synergies and avoid duplication in capacity-building delivery.
- Consider sustainability of training initiatives
- More “joint degrees” could also be explored as another approach to sustainability in North – South cooperation which supports the “cooperating partner” to become self-sustained.
- Bring it to the field level where the multidisciplinary cooperation is being supported and the “One Health workforce” is being strengthened



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