

BETTER COST Action project – what we have learnt during our four years of existence

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**Universitat Autònoma
de Barcelona**

Start Date: **21/10/2021**
End Date: **20/10/2025 (4 years)**



BETTER



**Funded by
the European Union**

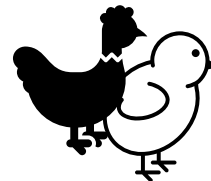
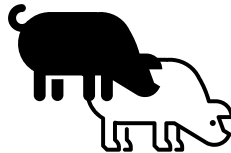
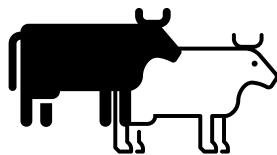
Contact info at: <https://better-biosecurity.eu/>



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• Our Challenge (main aim)

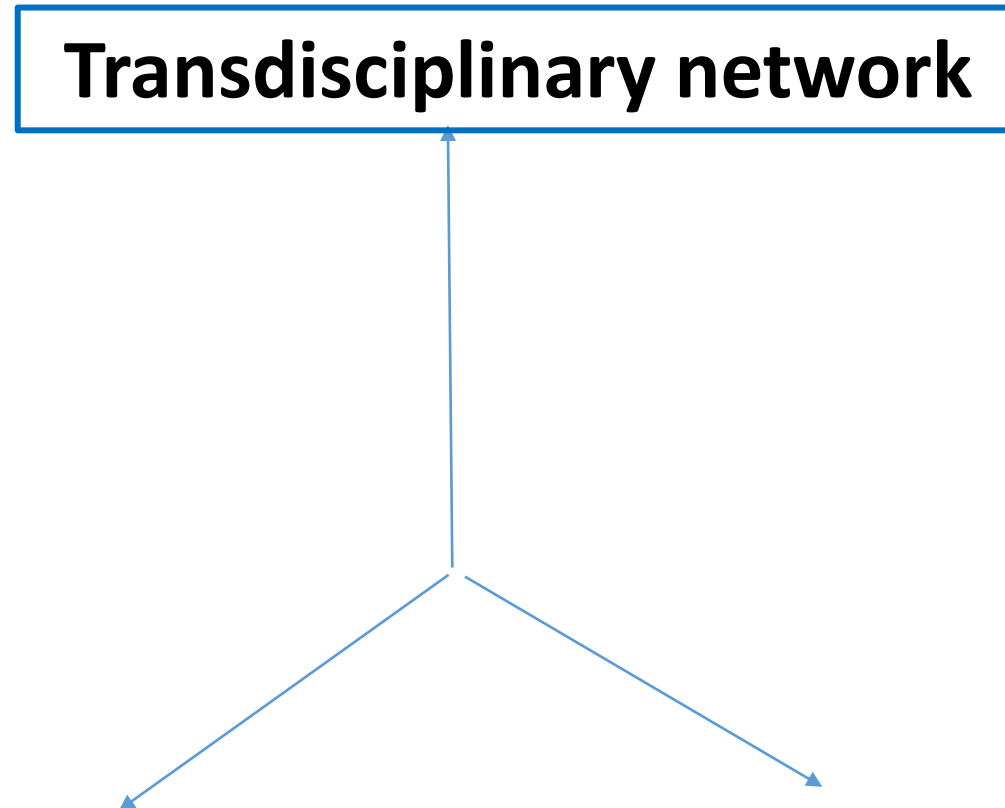
To reduce the risk of infectious disease introduction and spread by **improving the implementation of biosecurity measures** in animal production systems





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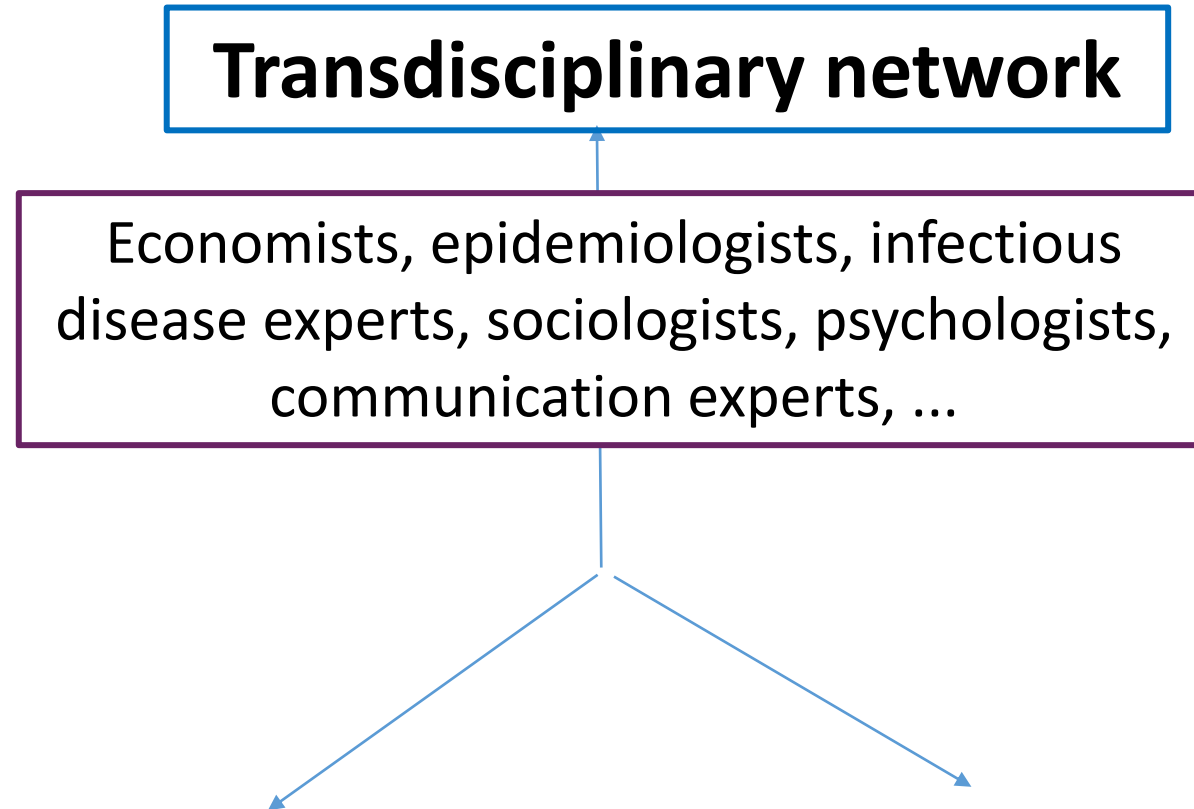
• Our Approach





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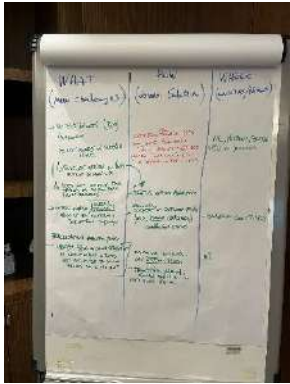
• Our Approach



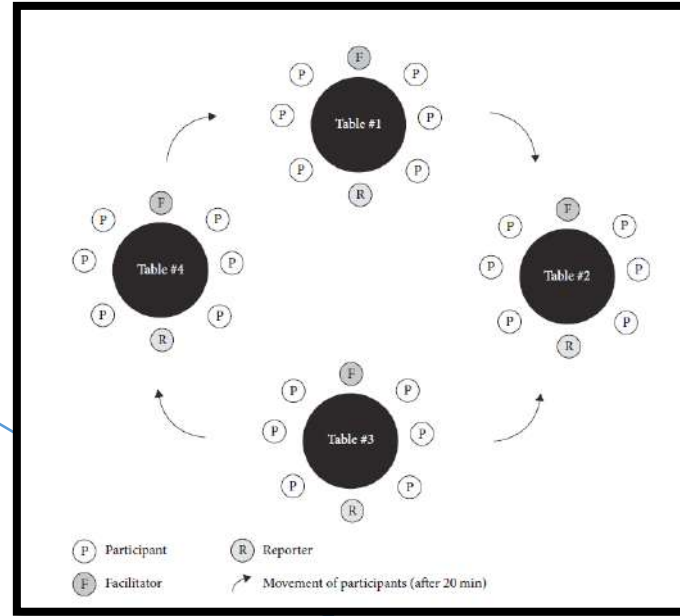
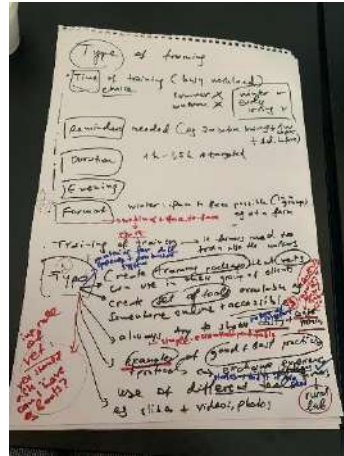


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• Our Approach



Transdisciplinary network



Use a participatory approach

Source: Saegerman et al., (2024) Scanning European Needs and Expectations Related to Livestock Biosecurity Training by Using the World Café Method



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• Our Approach

Transdisciplinary network



BETTER in Numbers

48

Countries participating

36

Full COST Members

03

Near Neighbor Countries:
Jordanian, Kosovo and Tunisia

07

International Partner Countries:
Australia, Argentina, Burkina Faso, Canada,
Cameroon, India and New Zealand

Use a participatory approach

Large geographic coverage



Challenges

WG 1

How biosecurity is applied in Europe and neighboring countries and ways for improvement

WG 2

To scale-up the knowledge and experience of different stakeholders

WG 3

Review methods to evaluate biosecurity and its benefits

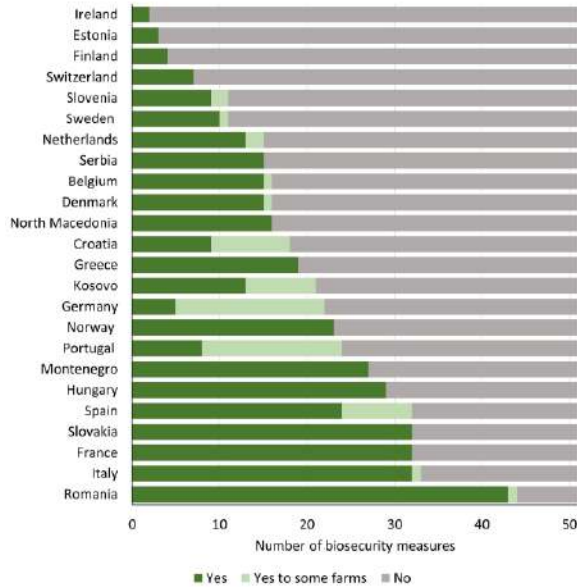
WG 4

To increase the number of professionals trained on biosecurity through innovative teaching methods

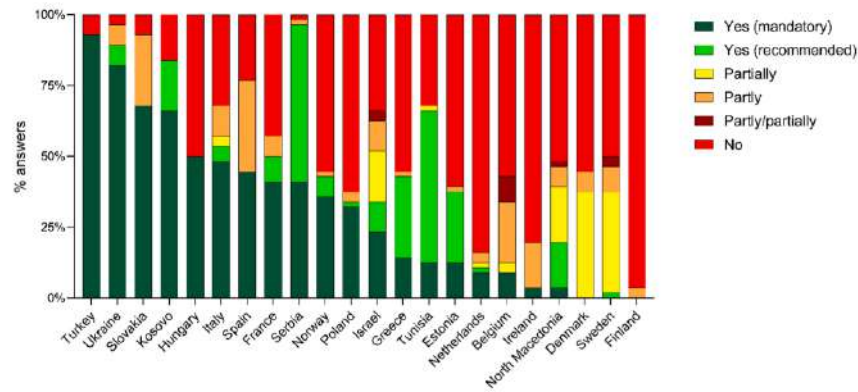
Biosecurity legislation

Different countries have different strategies (i.e., national legislations are very heterogenous): the number of compulsory measures by law per country is very different

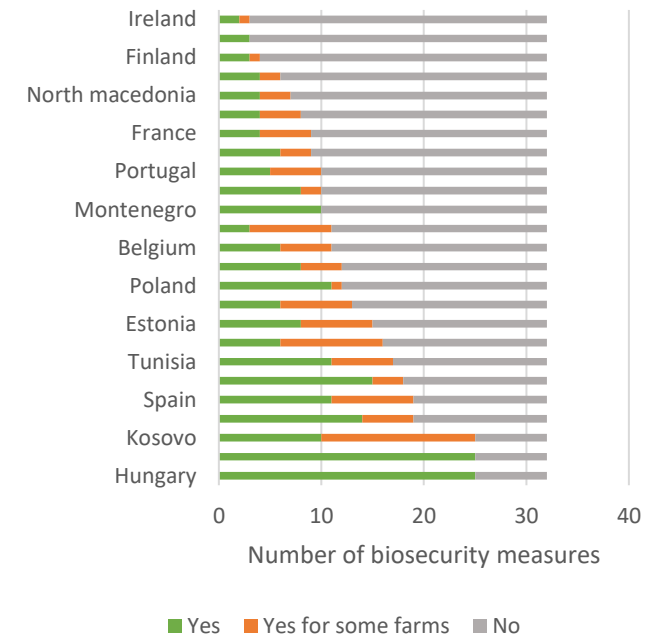
Pig farms



Poultry farms



Cattle farms

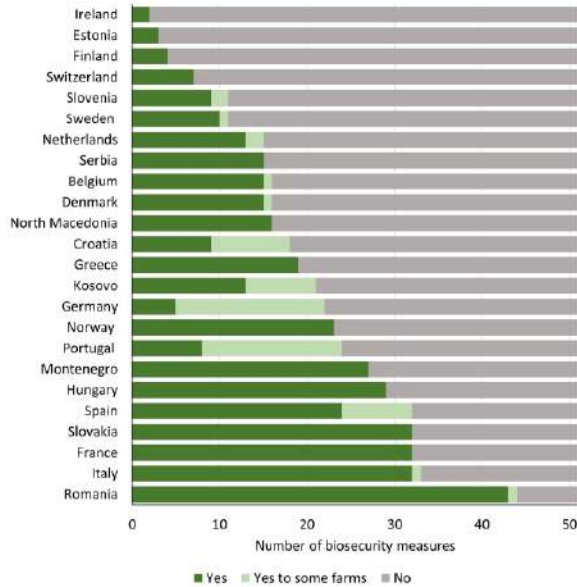


Manuscript under preparation

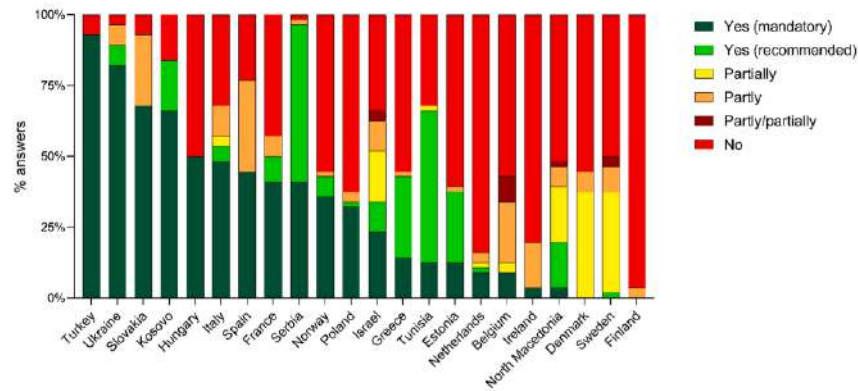


- Do countries with more legislation have better biosecurity standards?
- Do we need more homogeneous legislation between countries?

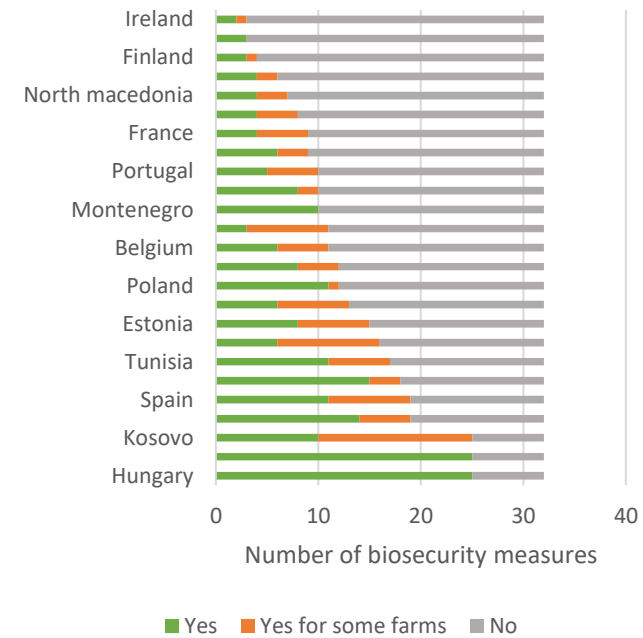
Pig farms



Poultry farms



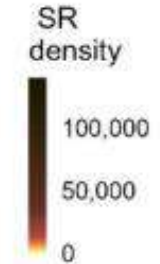
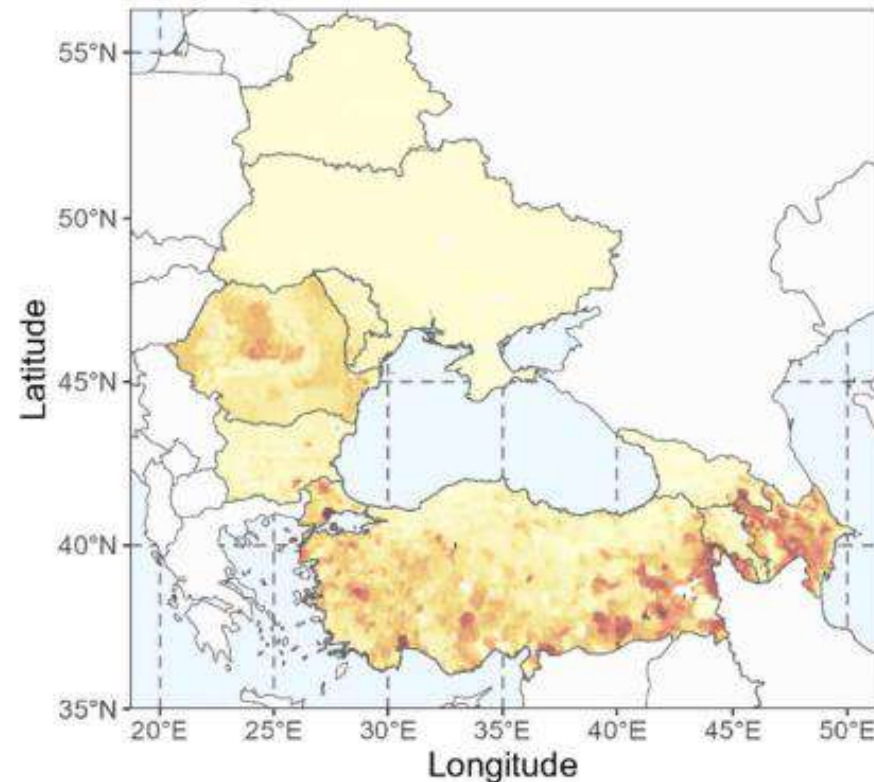
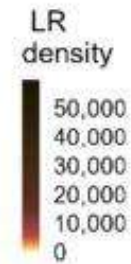
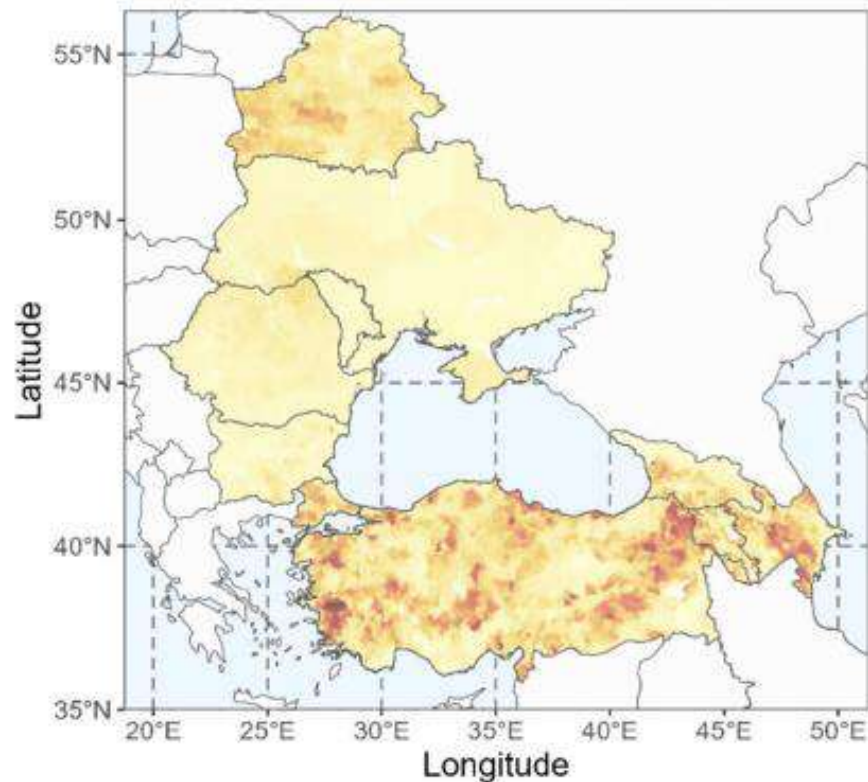
Cattle farms



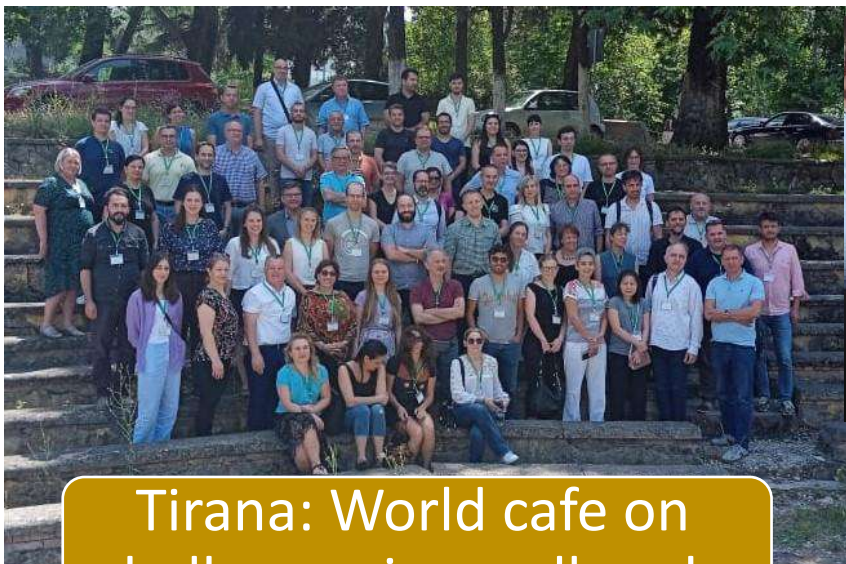
Manuscript under preparation



In Balkans, Caucasus, in some countries from eastern Europe, more than 75% of herds are small-scale farms



Source: Arede et al., (2023): Examination of critical factors influencing ruminant disease dynamics in the Black Sea Basin



Tirana: World cafe on challenges in small-scale farms



Kotor: Workshop on how to improve biosecurity in small-scale farms

Instructions for completing the small scale farm questionnaires

Dear CFP,

With this questionnaire, we aim at two things. First we would like to get an idea of how small scale farms (pigs, cattle or poultry) are defined in your country by the legislation or by general use. Therefore, you should complete the **word questionnaire**.

Second, for each type of small scale farm, we would like to map the presence of national legislation on biosecurity in your country. Therefore, you should complete the **excel questionnaire**. Below you can find a more detailed action plan.

Note: small scale farms also include farms of the backyard type. The presence and definition of 'backyard' is different in each country, therefore we decided to use the term 'small scale'.

Survey



Challenges

- **Low engagement** in animal health programs
- **Limited support** from government and animal health organisations (lack of funding and training)
- **Additional risk due** to practices related to the use of communal pastures, transhumance or seasonal grazing

Possible solutions

- **Trainings** adapted to the needs and possibilities of the small holdings
- **Legislation adapted** to small-scale farms
- **Funding** so that adequate resources can be accessed

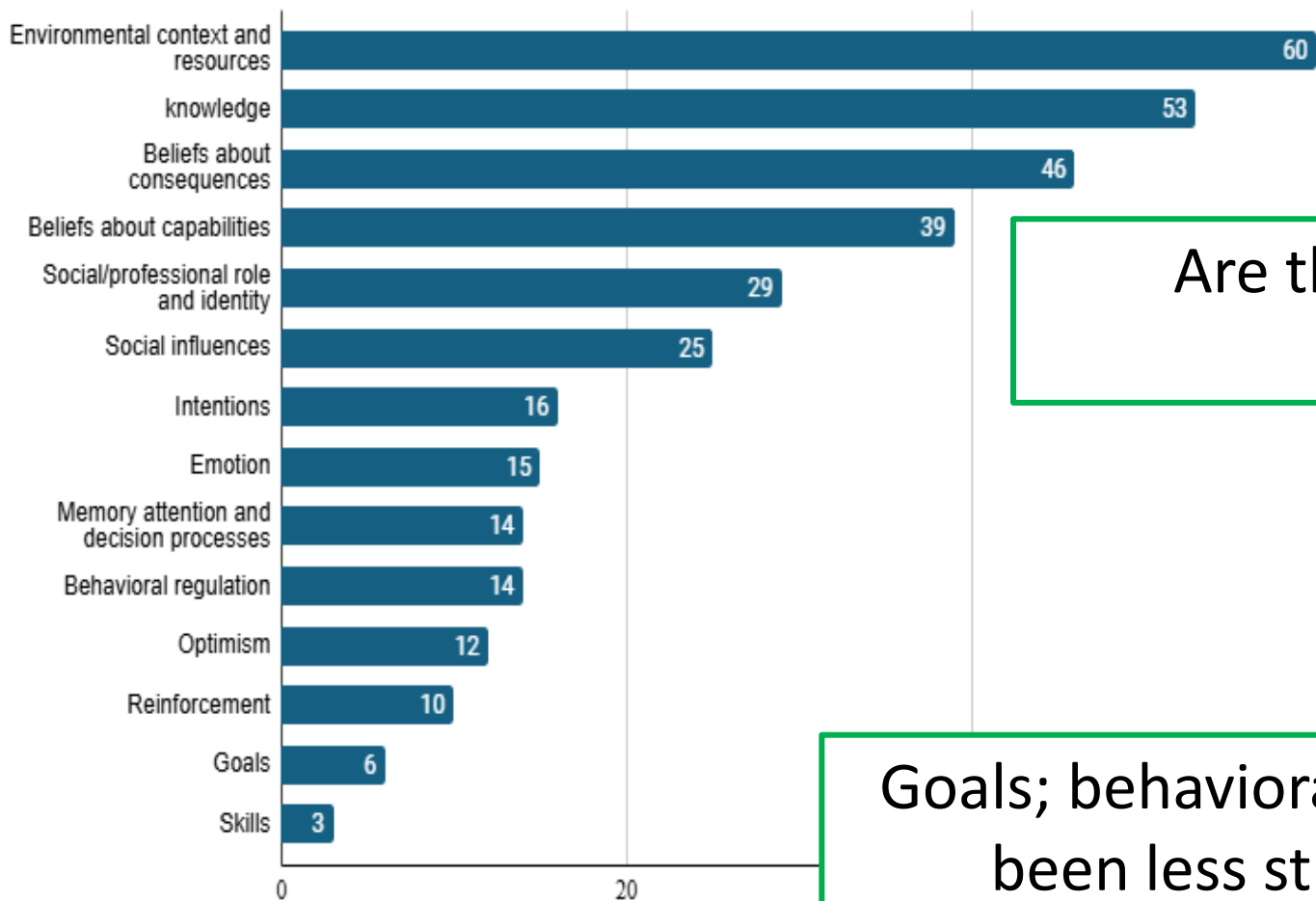
Needs on small-scale farms

There **is a need** to outline **new and improved strategies** to increase biosecurity in small-scale farms integrated with **ad-hoc training and outreach programs**



Dialogue with farmers

Knowledge, social influences and beliefs about consequences



Are the domains that have been more frequently studied



Goals; behavioral regulation and reinforcement have been less studied -> is there a need for more intervention studies?



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Dialogue with general public

The **general public** has a **limited** awareness of human-mediated pathogens transmission



"The General Public to the Palace for the New Year Greeting 2019" by Dick Thomas Johnson is licensed under CC BY 2.0.



There is a need to develop adequate communication strategies to reduce the risk of spread of diseases (e.g., African Swine Fever and food)

Dialogue with researchers, official veterinary services and industry

TABLE 1 Results from two sets of questions on methods of communicating with farmers about biosecurity.

Method	What methods do you use/would you use to communicate with farmers about biosecurity?		What communication methods do you think farmers prefer?	
	<i>n</i>	Total	<i>n</i>	Total
I do not engage	9	51	4	51
Printed leaflets or pamphlets	14	51	7	51
Educational videos	20	51	15	51
Written correspondence (letters)	7	51	1	51
Telephone conversations	22	51	12	51
Individual online meetings	10	51	7	51
Webinars or online seminars	14	51	10	51
On-site farm visits	38	51	43	51
Face-to-face group meetings	30	51	35	51
Online resources and websites	13	51	9	51
Other	1	51	1	51
Total responses		178		144



Preferred communication methods are “on-site farm visits” and “face-to-face” group meetings



Do farmers have a similar opinion?
(work in progress)



frontiers | Frontiers in Veterinary Science

THIS Brief Research Report
PUBLISHED 19 March 2025
DOI: 10.3389/fvets.2025.1562648

Check for updates

OPEN ACCESS

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Stakeholders' perspectives on communicating biosecurity to encourage behavior change in farmers




Sebastian Moya^{1*}, Kate Lamont², Marnie L. Brennan¹,
Giovanna Ciavarino³, Maria Costa², Alberto Allepuz²,
Lena-Mari Tamminen⁴, Carla Correia-Gomes⁵,
Helena De Carvalho Ferreira⁶, Mehmet Murat Dogusan⁷,
Teresa Imperial⁸, Daniele De Meneghi⁹, Miroslav Kjosevski⁹,
Ilias Chantziaras¹⁰ and Alison Burrell⁹

Veterinarians and other professionals involved in promoting biosecurity standards in livestock farms **acknowledge difficulties in:**

Hindawi
Transboundary and Emerging Diseases
Volume 2024, Article ID 6743691, 11 pages
<https://doi.org/10.1155/2024/6743691>

Research Article

Scanning European Needs and Expectations Related to Livestock Biosecurity Training by Using the World Café Method

Claude Saegerman ¹, Jarkko K. Niemi,² Nancy De Briyne,³ Wiebke Jansen,³ Alain Cantaloube,⁴ Marcel Heylen,⁵ Tarmo Niine ⁶, Julia Gabrielle Jerab,⁷ Alberto Allepuz ⁸, Ilias Chantziaras,⁷ Maria Rodrigues da Costa,⁹ Marie-France Humblet,¹⁰ and Maria Eleni Filippitzi¹¹

Effectively communicating the importance of biosecurity and on **promoting behavioural change** to implement these measures

Finding **practical and educational resources** to support the implementation of biosecurity

Need of innovative trainings

There is a need to provide an **interdisciplinary training** that cover the **specific needs** of those professionals and to provide them with **practical and educational tools to reduce the risk of transmission of pathogens**



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Proposals for filling training gaps

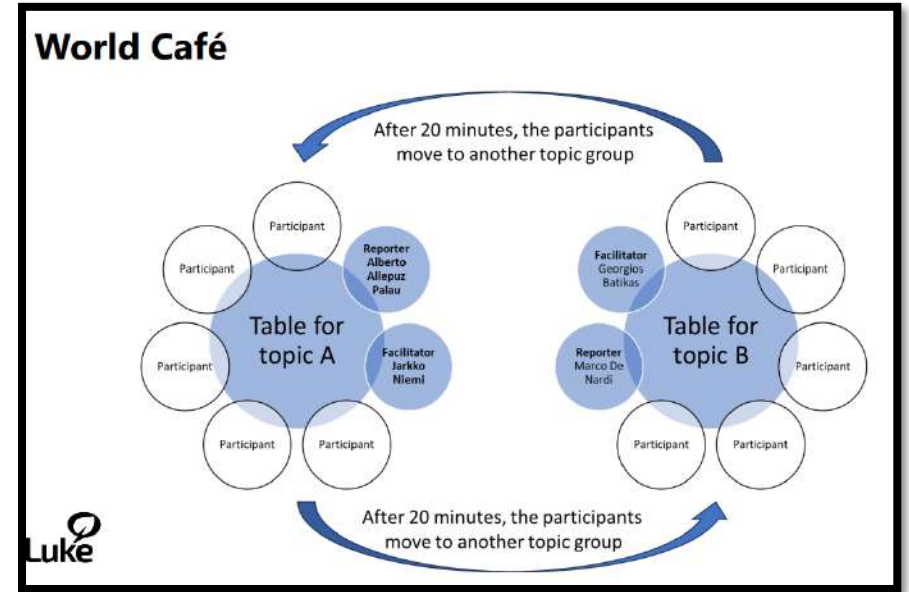
Module 1: Introduction to Biosecurity

Module 2: Communication & Compliance

Module 3: Disease Transmission & Risk Assessment

Module 4: Emergency Response and Clinical Biosecurity

Module 5: On-Farm Practices



Perspectives

Tailored Biosecurity Training for Veterinarians and Farmers: Bridging Knowledge and Practice Gaps

Manuscript under preparation

Hindawi
Transboundary and Emerging Diseases
Volume 2024, Article ID 6743691, 11 pages
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Research Article

Scanning European Needs and Expectations Related to Livestock Biosecurity Training by Using the World Café Method

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We also have created training materials through different training schools

    **Funded by the European Union**

COST Action
"Biosecurity Enhanced Through Training
Evaluation and Raising Awareness"
(Acronym: BETTER)
CA20103

First training school
14-18 November 2022 at the
Faculty of Veterinary Medicine,
University of Liège (Belgium)

*"Biosecurity SOPs at Faculty of Veterinary
Medicine:
Conception - Implementation - Evaluation"*

   **Funded by the European Union**

COST Action
"Biosecurity Enhanced Through Training
Evaluation and Raising Awareness"
(Acronym: BETTER)
CA20103

Second training school
18-19 March 2023 at the
Swedish University of Agricultural
Sciences (Sweden)

*"Biosecurity Assessment and Motivational
Interviews"*

   **Funded by the European Union**

COST Action
"Biosecurity Enhanced Through Training
Evaluation and Raising Awareness"
(Acronym: BETTER)
CA20103

Third training school
7-8 May 2025, Helsinki, Finland

*"Economic analysis and tools for effective
communication and endorsement of enhanced
biosecurity measures"*



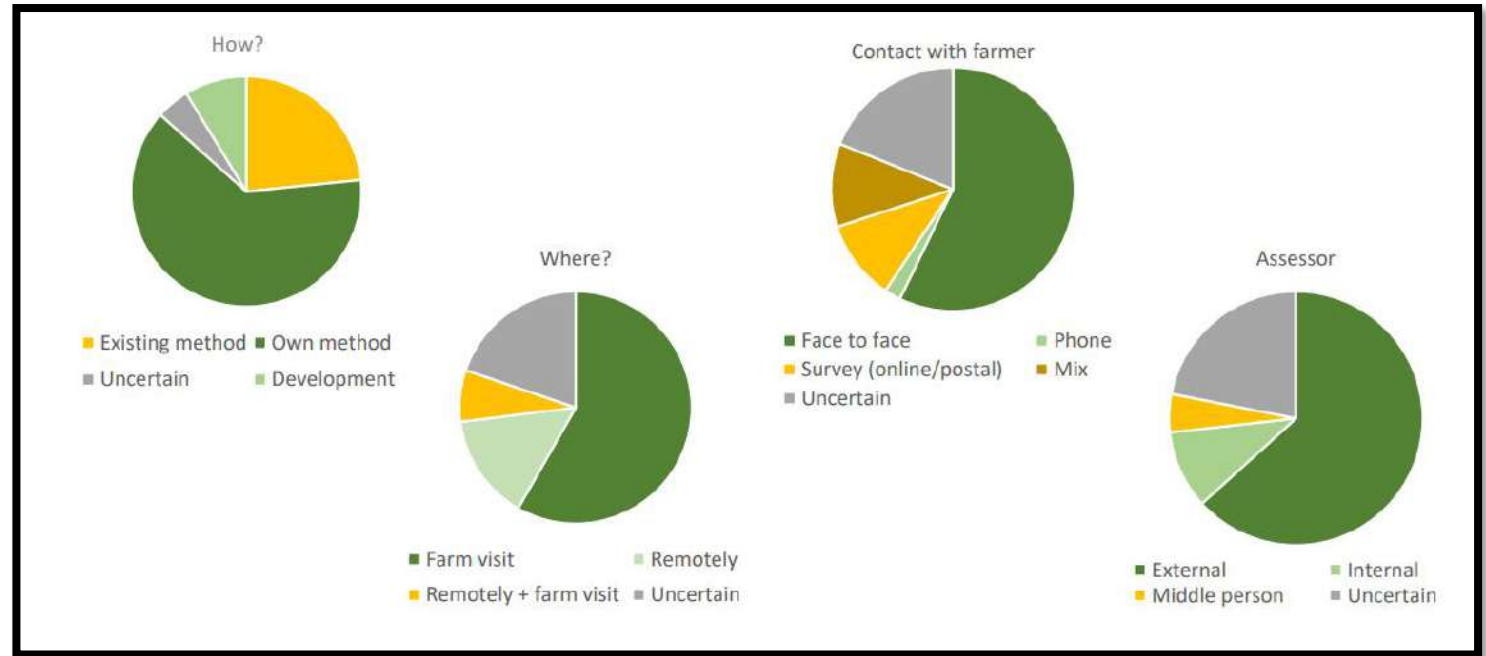


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Biosecurity assessment methods used

Large number of different biosecurity assessment methods

Main objective	Pigs N = 45		Ruminants N = 30		Poultry N = 37	
	N	%	N	%	N	%
Certification for quality assurance						
Mandatory	2	4 %	1	3 %	3	8 %
Mandatory; Voluntary					1	3 %
Voluntary	4	9 %	2	7 %	6	16 %
To improve biosecurity of the farm						
Mandatory	12	27 %	7	23 %	8	22 %
Mandatory; Voluntary			1	3 %	3	8 %
Voluntary	26	58 %	14	47 %	16	43 %
To control/prevent a specific disease						
Mandatory	6	13 %	4	13 %	4	11 %
Mandatory; Voluntary			1	3 %	2	5 %
Voluntary	8	18 %	10	33 %	7	19 %
To decrease antibiotic use						
Mandatory	3	7 %	1	3 %	1	3 %
Mandatory; Voluntary						
Voluntary	5	11 %	6	20 %	4	11 %
“Other” objective						
Mandatory	2	4 %	1	3 %		
Mandatory; Voluntary					1	3 %
Voluntary			1	3 %		



Manuscript under preparation

Contents lists available at ScienceDirect

Preventive Veterinary Medicine

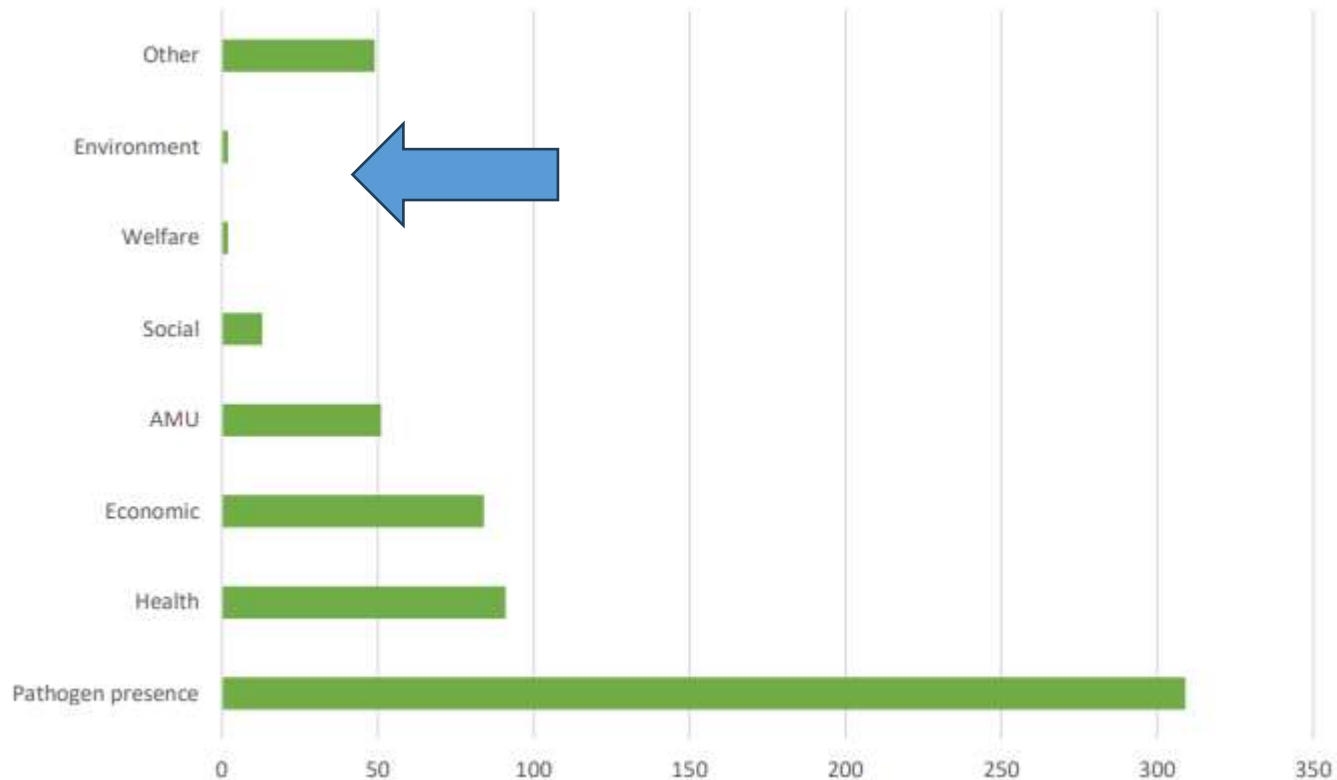
ELSEVIER journal homepage: www.elsevier.com/locate/provetmed

Methods to assess on-farm biosecurity in Europe and beyond

Fernando Duarte^a, Lena-Mari Tamminen^b, Miroslav Kjosevski^c, Giovanna Ciaravino^a, Mattias Delpont^d, Carla Correia-Gomes^e, Bart H.P. van den Borne^{de}, Ilias Chantziaras^g, Laura Valeria Alarcón^h, Lise Svennesenⁱ, Ina Toppari^j, Alessandra Piccirillo^g, Rreze M. Gecaj^j, Artur Zbikowski^{kl}, Telmo Nunes^{kl}, Jasna Prodanov-Radulović^g, Marco De Nardi^g, Vitalii Nedosekov^g, Amelie Desvars-Larrive^{lno}, Alberto Allepuz^o

Biosecurity assessment methods used

And is uncommon to combine biosecurity with other fields such as welfare or the environment



Manuscript under preparation

Should we go in the direction of having a standardized method to assess biosecurity or this heterogeneity is beneficial?

Is a more holistic perspective needed? Should biosecurity assessments be combined with other topics such as welfare and the environment impact?

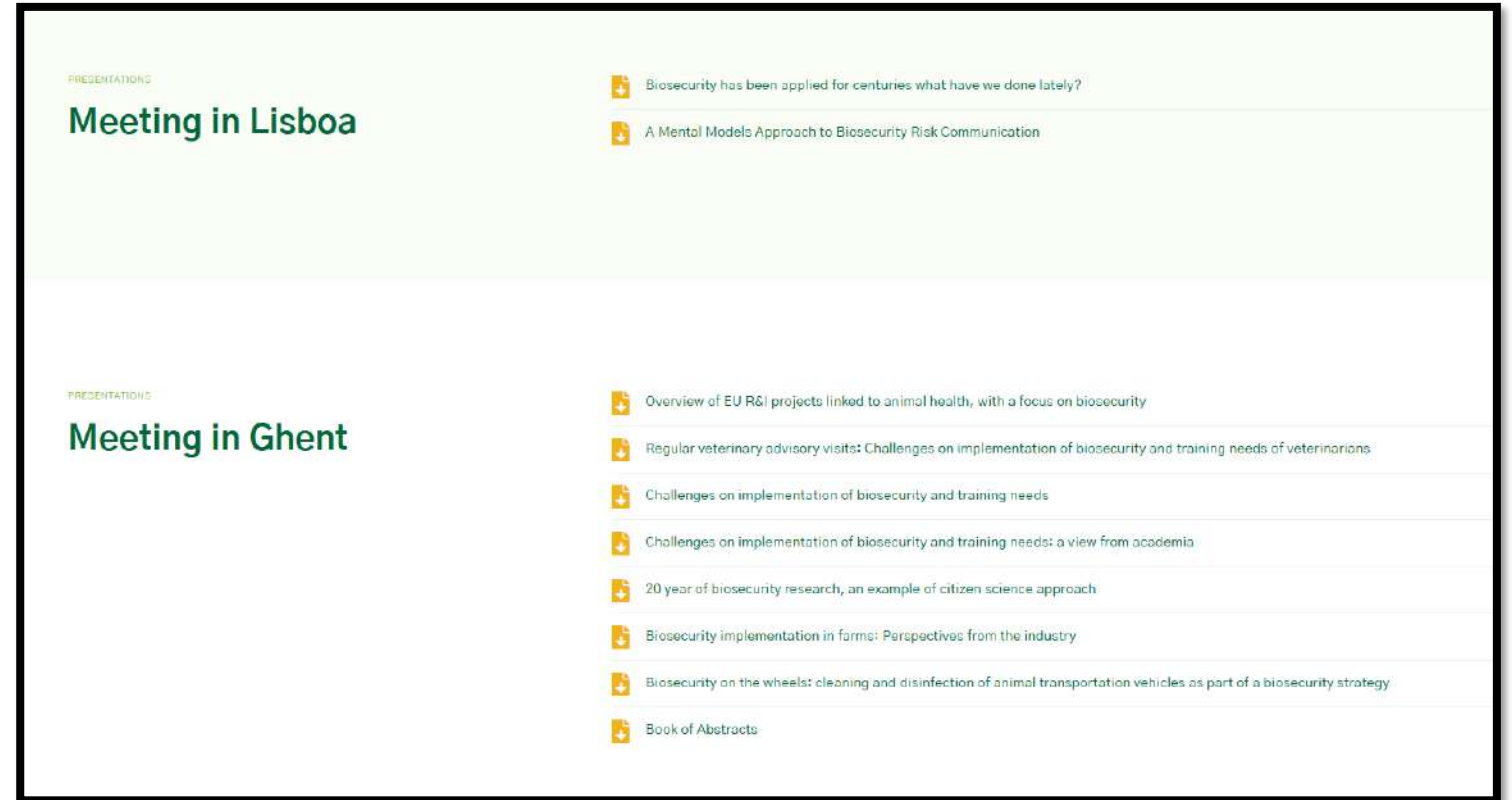
WG 1

WG 2

WG 3

WG 4

- To **improve the communication and information sources** related to biosecurity aimed at veterinarians, farm advisors, farmers' associations and official authorities
- To **strengthen the links** between different stakeholders and funding agencies within and outside Europe to promote research and education on biosecurity
- To create a **sustainable network** for the promotion of **research, education and application** of biosecurity measures in European countries



<https://better-biosecurity.eu/repository/>

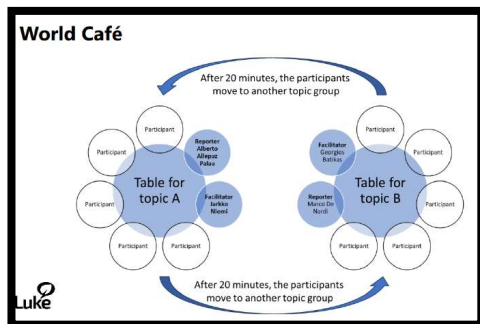
Information sources: recorded webinars

Date	Time (CET)	Topic	Title	Affiliation	Speaker(s)	Webinar/Recording link	Add to Calendar
10th May 2023		Biosecurity in dairy production	Biosecurity to combat antibiotic resistance in animal farms: examples from Romanian dairy farms	University of Agricultural Sciences and Veterinary Medicine of Bucharest	Prof. Stelian Baraitareanu	Youtube	
14th June 2023		Biosecurity in pig production	Biosecurity assessment and training: focus on US swine farms	Iowa State University College of Veterinary Medicine	Prof. Gustavo Silva	Youtube	
13th September 2023	2:00 PM	Major enhancement of U.S. swine industry biosecurity	Major enhancement of U.S. swine industry biosecurity: How on-farm biosecurity, pig and vehicle movement may explain between-farm disease dissemination?	North Carolina State University	Prof. Gustavo Machado	Youtube	Expired
11th October 2023	2:00 PM	Biosecurity in poultry production	Biosecurity compliance in poultry production: the Italian experience from the EU-funded NetPoulSafe project	University of Padua	Prof. Alessandra Piccirillo & Dr. Giuditta Tilli	Youtube	Expired
8th November 2023	2:00 PM	Biosecurity in animal production	Quantifying biosecurity in animal production	Ghent University	Prof. Jeroen Dewulf	Youtube	
13th December 2023	2:00 PM	Biosecurity awareness and training	Group methodology to improve the level of application of biosecurity in pig farms in Argentina	Department of Epidemiology and Public Health, Faculty of Veterinary Medicine University of Universidad Nacional de La Plata, Argentina	Prof. Laura Valeria Alarcón	Youtube	
14th February 2024	2:00 PM	Biosecurity in animal production	Standardization of biosecurity methods in outdoor Iberian farms	University of Castilla-La Mancha (UCLM) & University of Cordoba (UCO)	Dr. Saul Gimenez Ruiz	Youtube	
10th April 2024	2:00 PM	Biosecurity in animal production	Quantification of the value of improved biosecurity: towards multiple burden estimations	Wageningen University and Research	Prof. H (Henk) Hogeveen	MS Teams	Expired
24th November 2024	2:00 PM	Biosecurity veterinary establishments	Biosecurity measures in the Department of Veterinary Medical Sciences (DIMEVET) of the Bologna University (Unibo)	University of Bologna	Dr. Silvia Piva	Youtube	

<https://better-biosecurity.eu/repository/>

Proposals for having a good biosecurity website

Priority rank	Topic
1	Practical applications
2	Information on biosecurity legislation
3	Resource repository for biosecurity in various production systems
4	Disease information
5	Effective veterinarian-farmer communication guide
6	Training resources
7	News
8	Expert directory
9	Questions & Answers (Q&A)
10	Costs and benefits
11	Sponsored content as part of website's financial viability
12	Postings



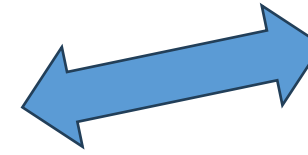
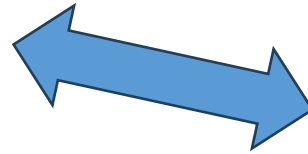
Preventive Veterinary Medicine

What is a "good" website for communicating biosecurity information to farmers and veterinarians?

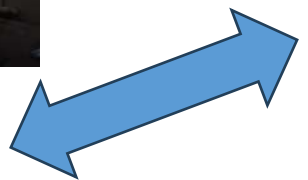
--Manuscript Draft--

Manuscript under review

To strenght links between different stakeholders: collaborations with several institutions



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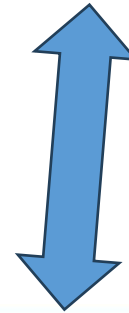
COST ACTION BETTER (CA20103) T4.3

Dear Participant,
You are invited to participate in COST action BETTER (Biosecurity Enhanced Through Training Evaluation and Raising Awareness) Task 4.3 online survey which is aims to collect information about existing training and research projects on biosecurity and herd health management. Current survey is carried out in collaboration with Federation of Veterinarians of Europe (FVE).

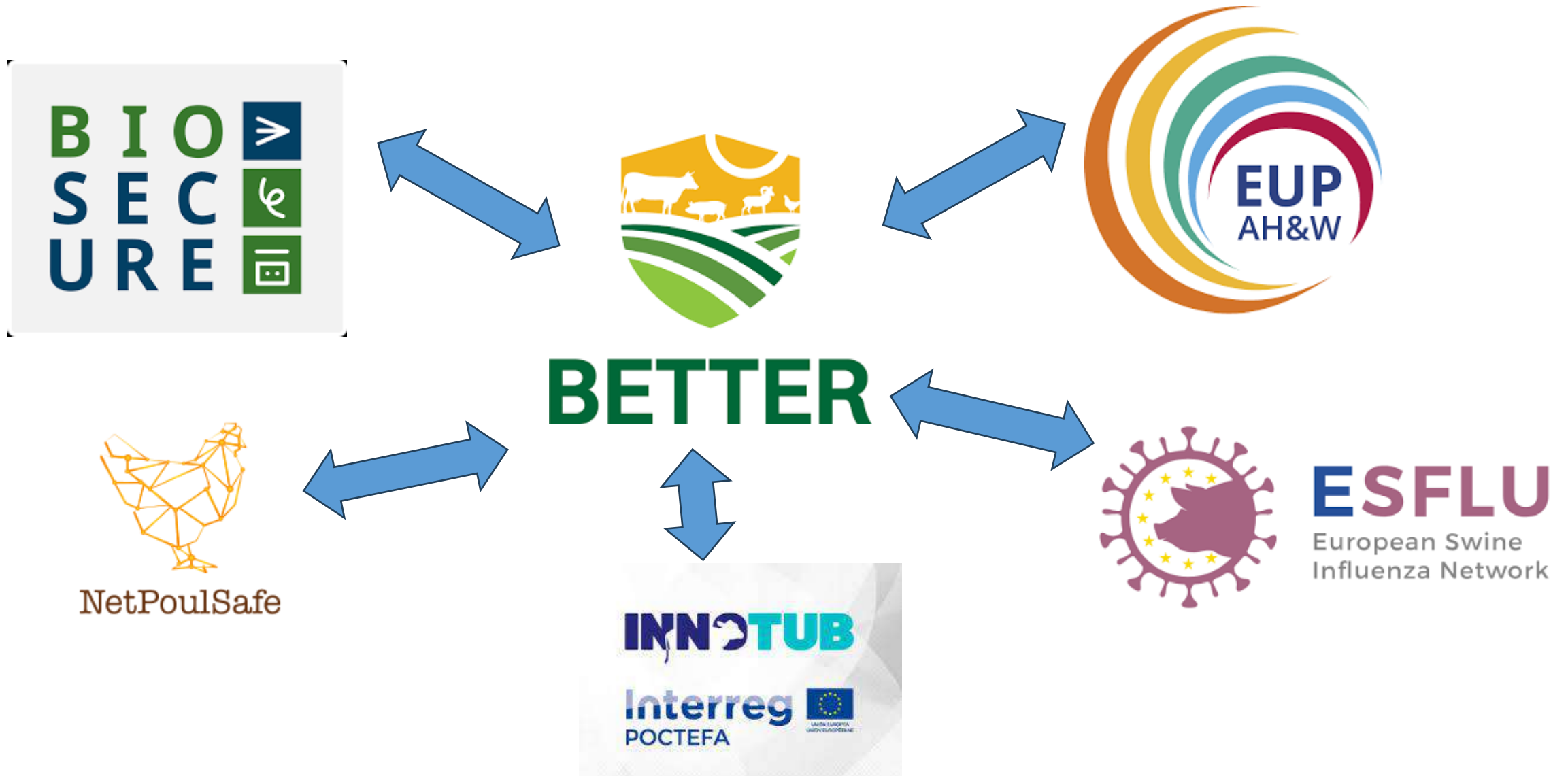
Goal of the survey
In current survey we collect information about ongoing or past biosecurity and herd health management research projects and training. With the collected information we aim to map current existing research projects and training programs related to these topics. Current survey is mainly targeted to the veterinary schools, veterinary associations, research centres, agricultural colleges, government bodies, farming and livestock sector organizations and other who are involved with the topics. Gathered information will be aggregated, analyzed and presented on COST action BETTER website: <https://better-biosecurity.eu/> and FVE website <https://fve.org/>



FESASS



To strenght links between different stakeholders: collaborations with several research projects



We have had several face to face meetings with a high assistance



Lisboa: June 2022



Ghent: February 2023



Tirana: June 2023



BETTER

We have had several face to face meetings with a high assistance



Padova: February 2024



Tartu: June 2024



Skopje: June 2025



Barcelona: June 2025

Also great mobility between institutions

21

16 Short Term Scientific Mission (STSM) and 5 Virtual mobility grants conducted.



And great presence in international events



FeMeSPRum meeting in Novi Sad



ISVEE in Sydney



15th European Symposium of
Porcine Health Management



SVEPM in Berlin

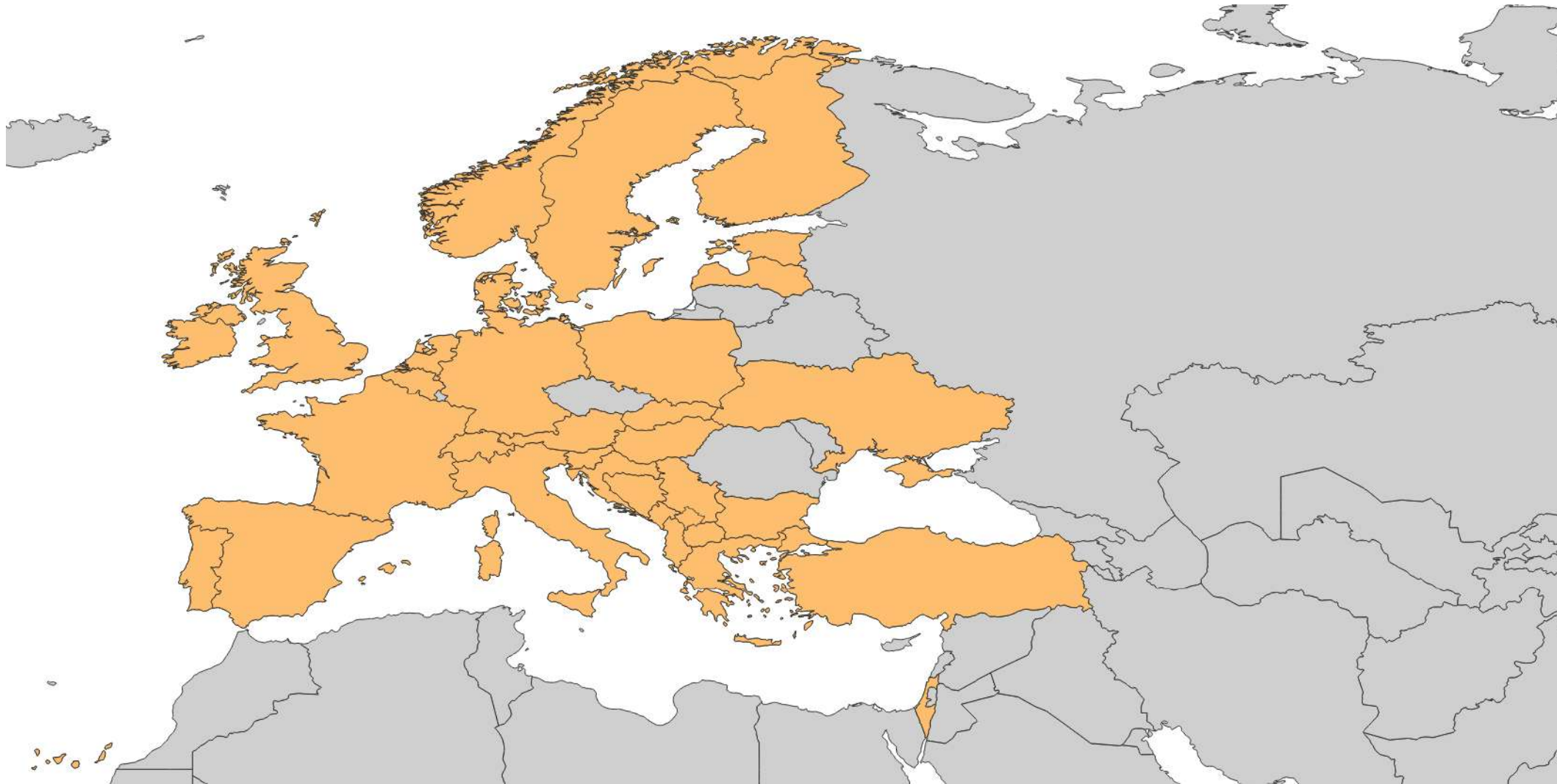


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We have been able to create a great network of experts with an interest in biosecurity in animal farms

Action membership
in February 2022

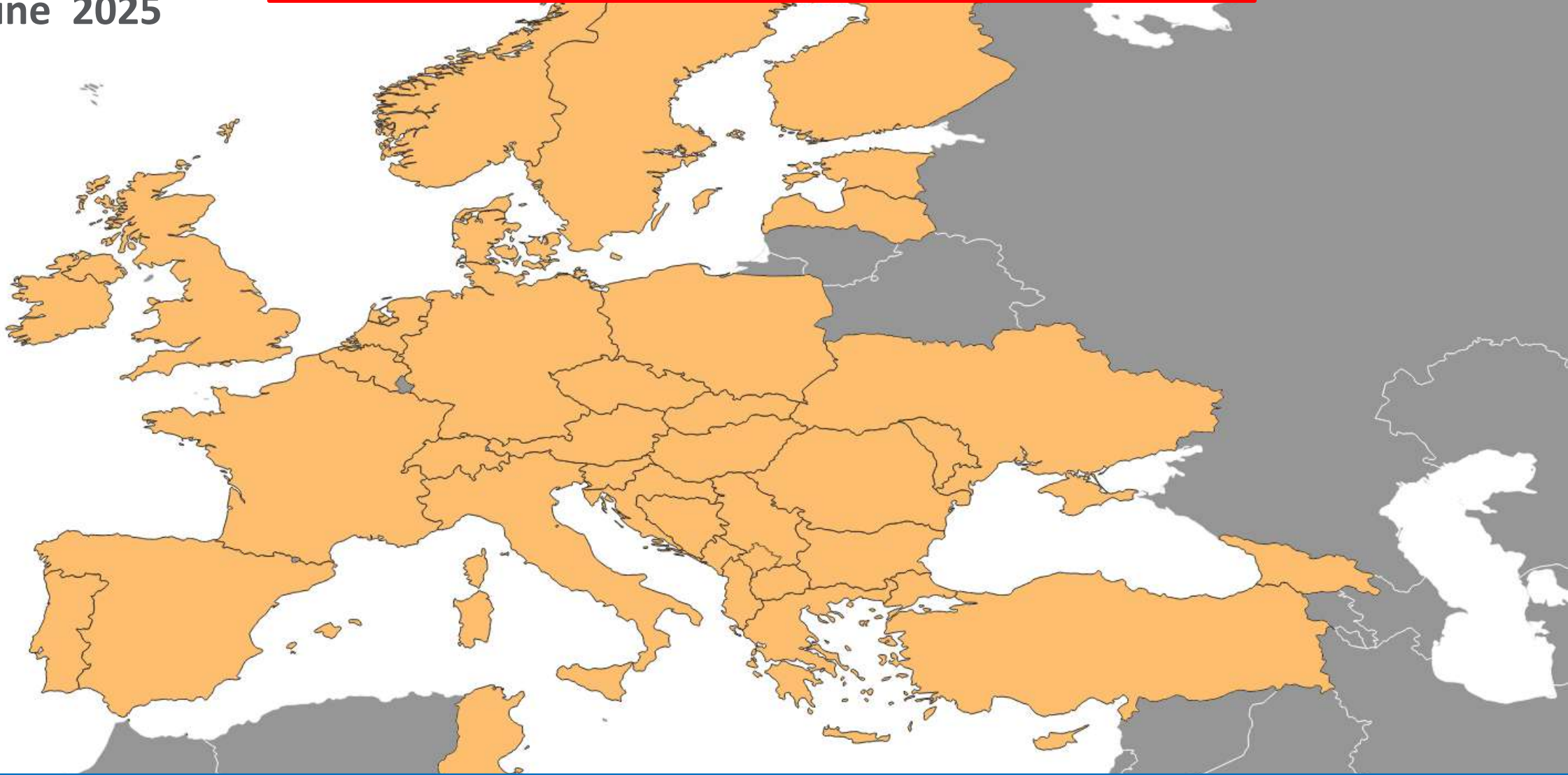
160 participants from 36 different countries



+ Argentina, Australia and Canada

Action membership
in June 2025

401 participants from 48 different countries



+ Argentina, Australia, Burkina Faso, Cameroon, Canada, Egypt New Zealand and India

And now what?



401 participants from 48 different countries



**World
Animal
Biosecurity
Association**



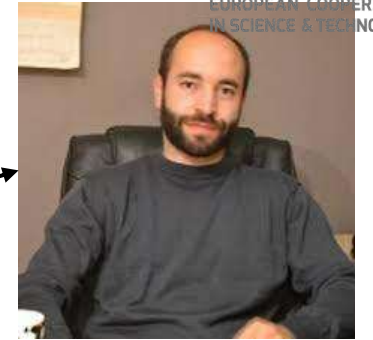
<https://wababiosecurity.com/>



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Vice-chair: Ilias Chantziaras (Ugent)



Science communication: Maria-Eleni Filippitzi (AUTH)



Grant coordinator: Caetano Luiz and Zahra Ardakani (UNIBO) / Joze Staric (UL)





BETTER

WG1



**Jasna
Prodanov
(Novi-Sad)**



**Telmo Nunes
(UL)**

WG2



**Maria
Costa
(SRUC)**

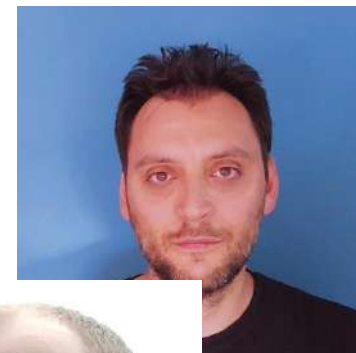


**Giovanna
Ciaravino
(UAB)**

WG3



**Lena-Mari
Taminnen
(SLU)**



**Miroslav
Kjosevski
(UKIM)**

WG4



**Claude
Saegerman
(ULiege)**



**Tarmo Niine
(Estonia)**



Jarkko Niemi (LUKE)

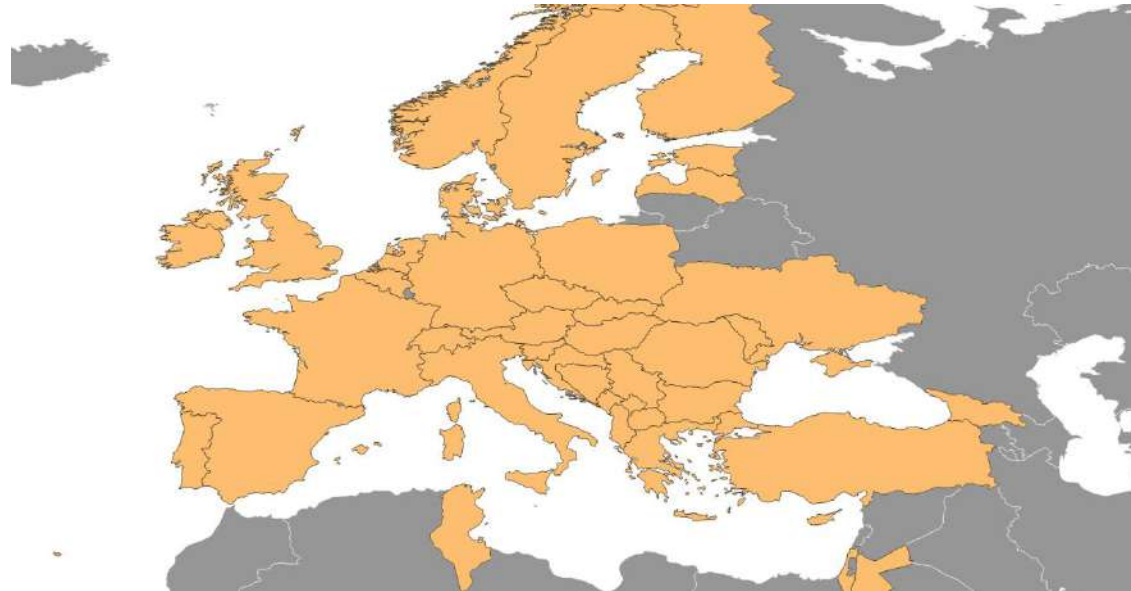
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401 participants from 48 different countries



Biosecurity Enhanced Through Training Evaluation and Raising Awareness

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