



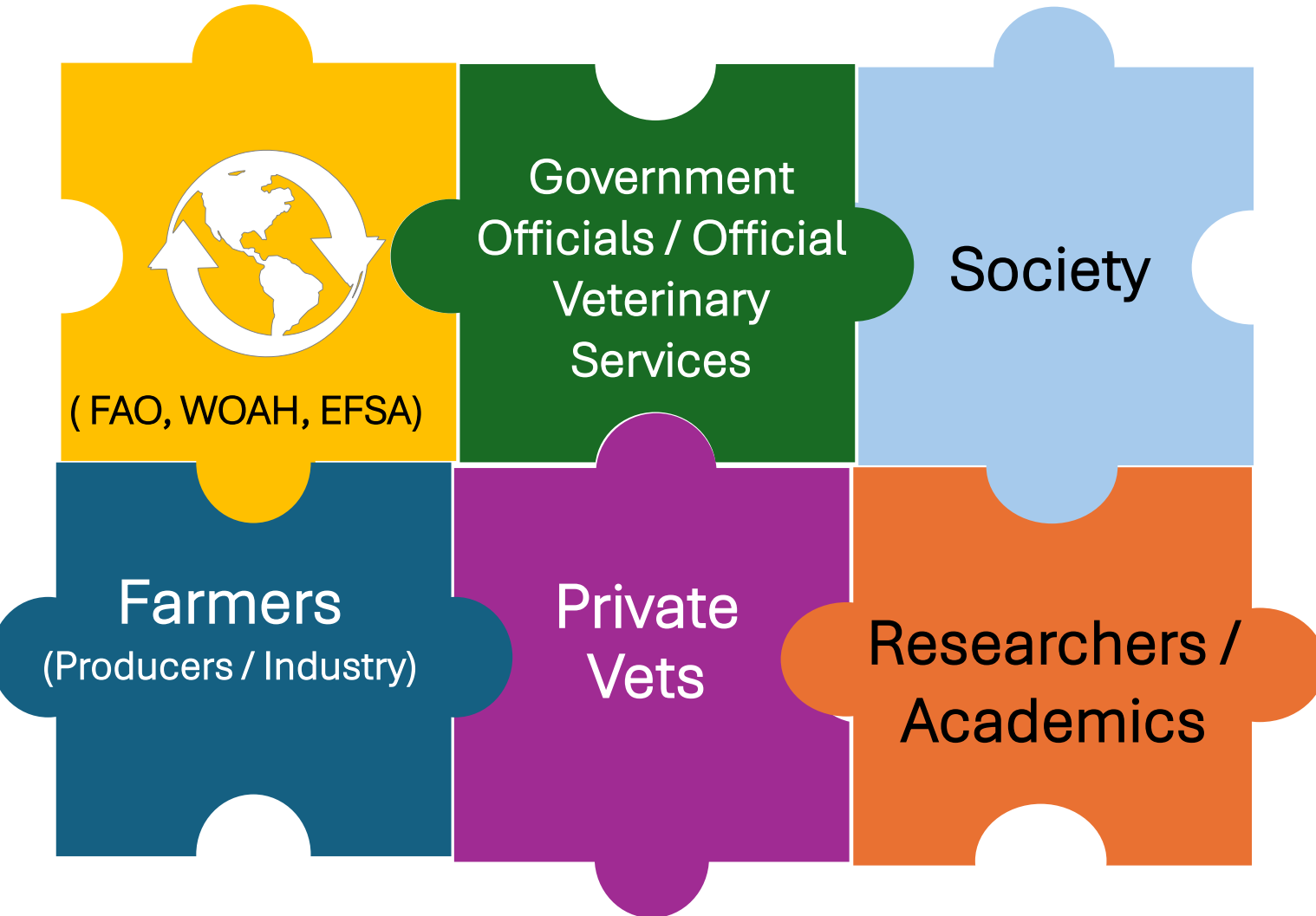
BETTER

Biosecurity Enhanced Through Training Evaluation and Raising Awareness (**BETTER**)

Work Group 2

*Scaling-up the knowledge and experience of stakeholders
and of the general public*

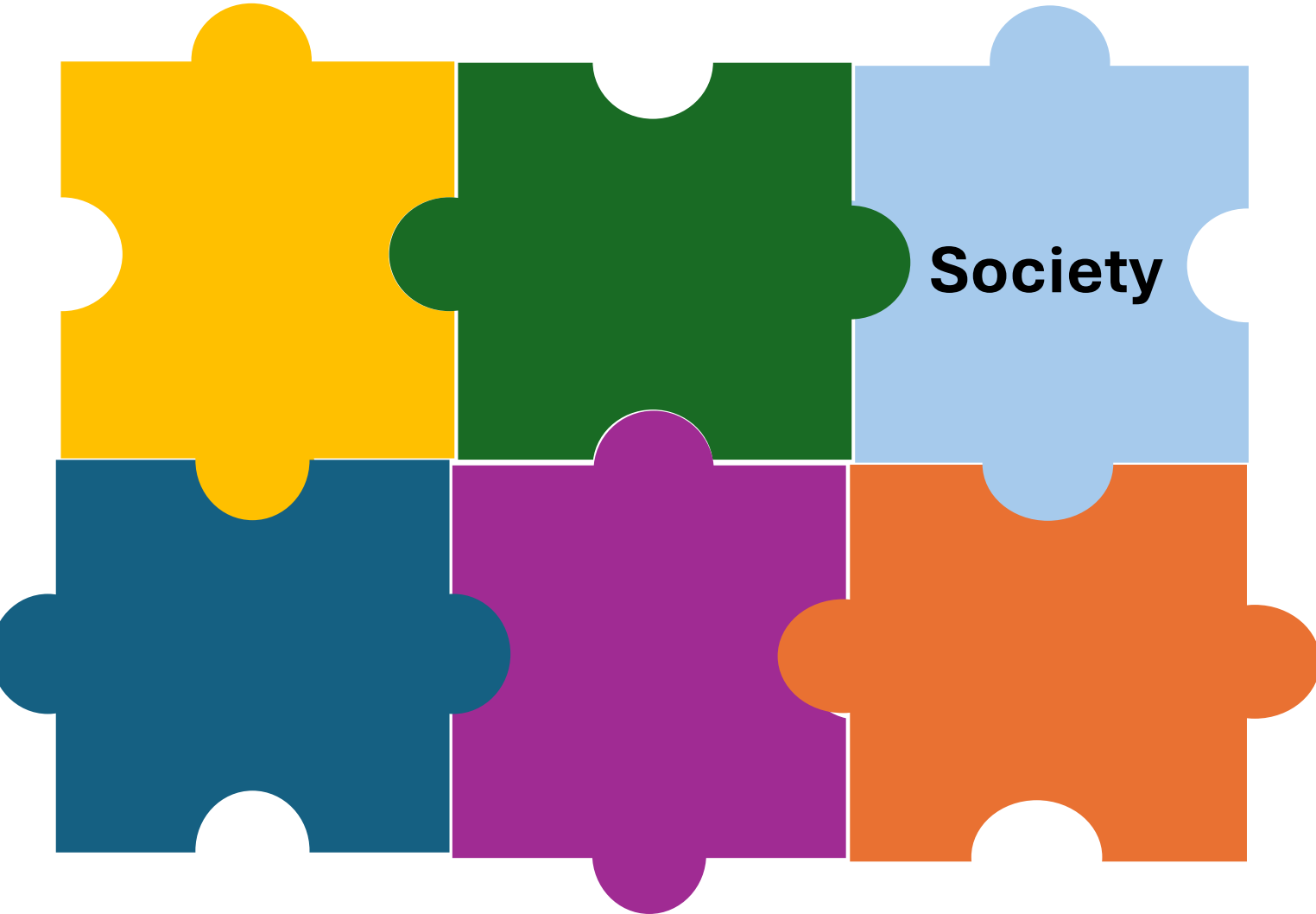
Establish a dialogue among all stakeholders to better tailor training and communication strategies



To explore how stakeholder expectations—including those of the general public—can be aligned with producers' needs

1. To explore societal attitudes toward biosecurity and public knowledge regarding disease spread.
2. To identify key factors—barriers and motivators—that influence decision-making regarding the adoption of biosecurity.
3. To gather evidence to develop tailored communication strategies aimed at raise awareness and foster positive biosecurity attitudes

Establish a dialogue among all stakeholders to better tailor training and communication strategies



Consumers





Survey

What Does The General Public Know About Biosecurity & Disease Spread In Livestock?

Lidiia Moskalenko, Maria Costa, Kate Lamont, Marnie Brennan, Sebastian Moya, Carla Correia-Gomes, Giovanna Ciaravino



23 languages

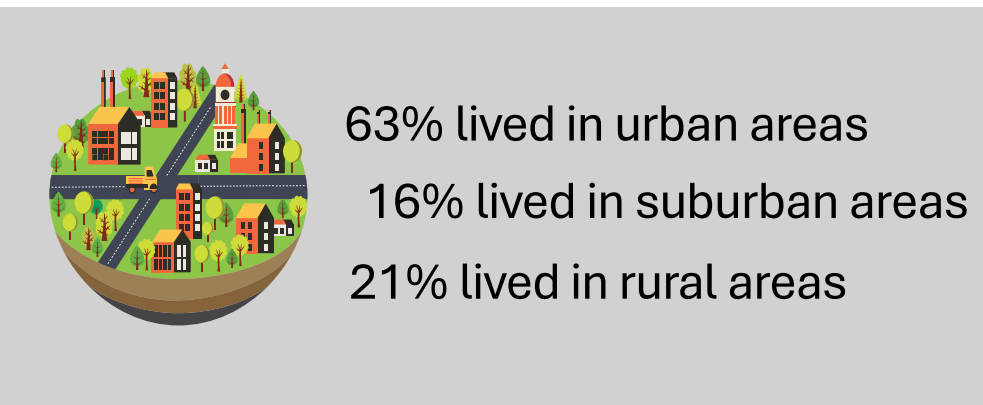
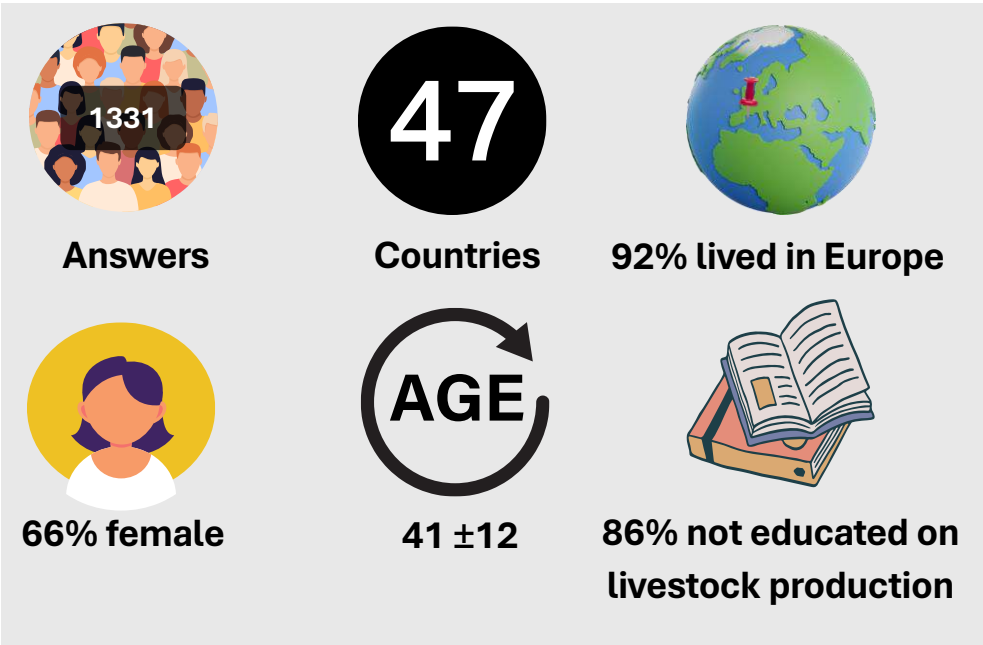


Aug 2022 to Jun 2023

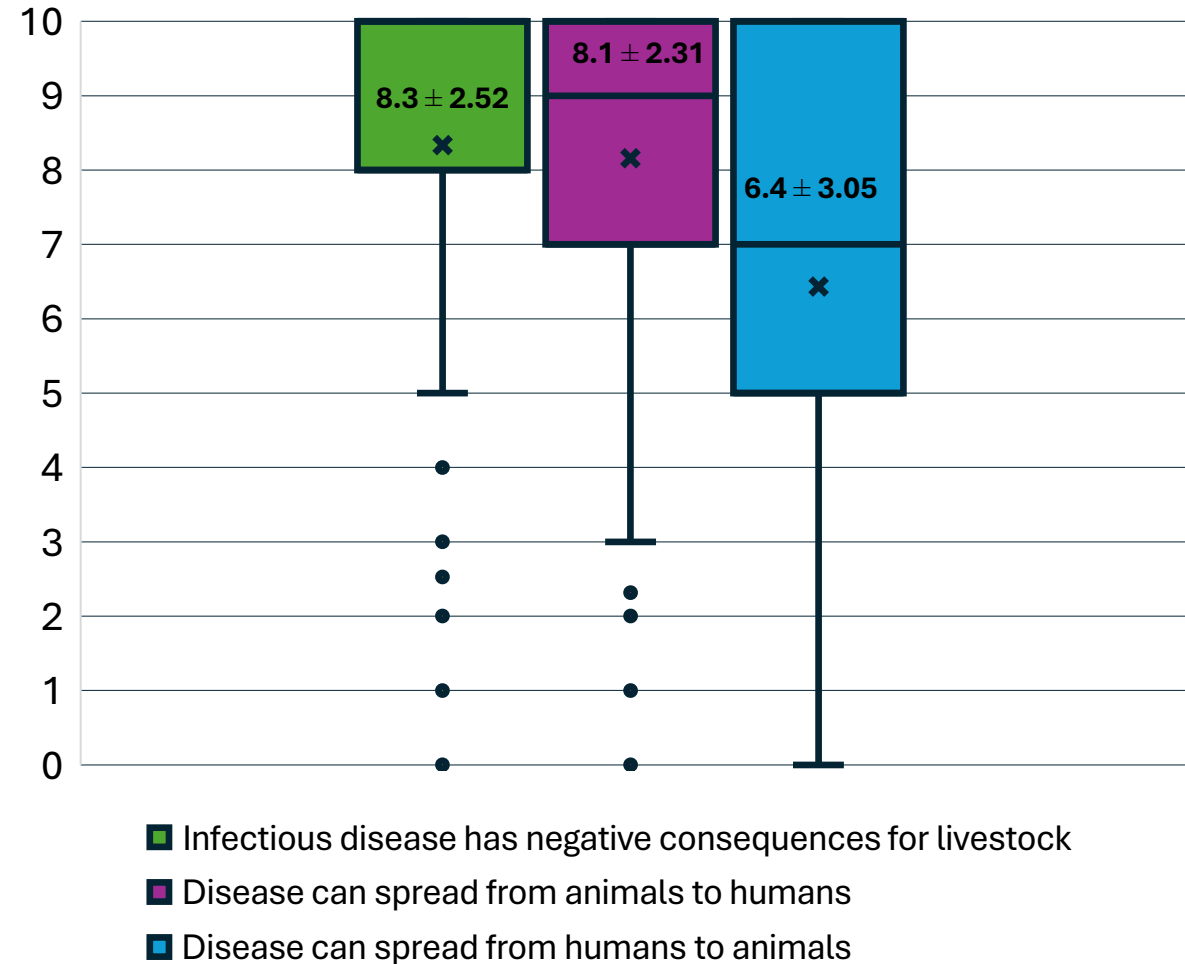


Not having livestock work experience
Aged over 18

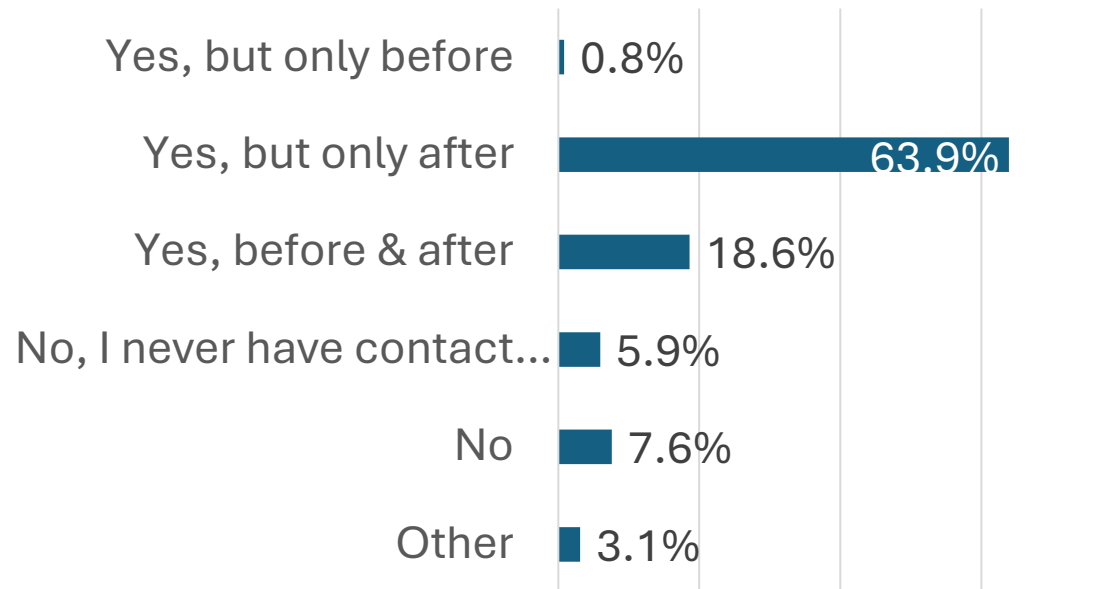
Respondent's profile



How much do you agree with these statements?



Do you wash or disinfect your hands before or after contacting animals?

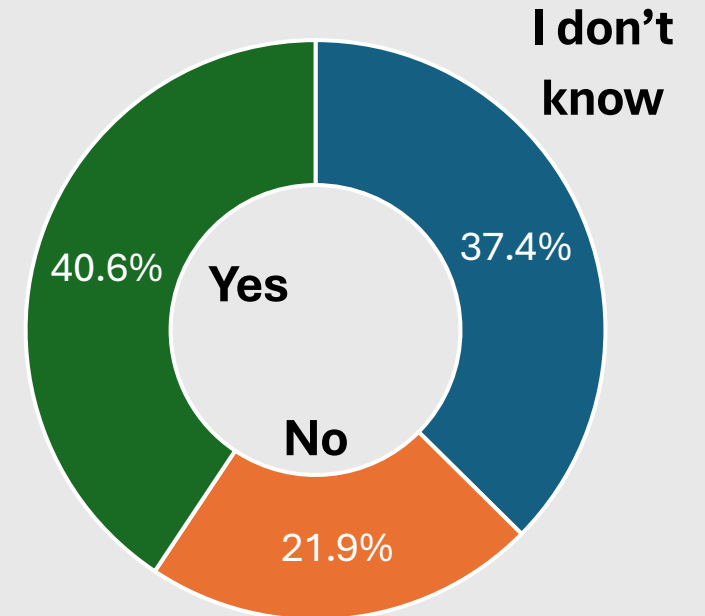


What would you do?

You are having a picnic in the countryside, close to a farm.



Do you think the **leftovers of food** left in the picnic area **could infect the farm animals** with an infectious disease?

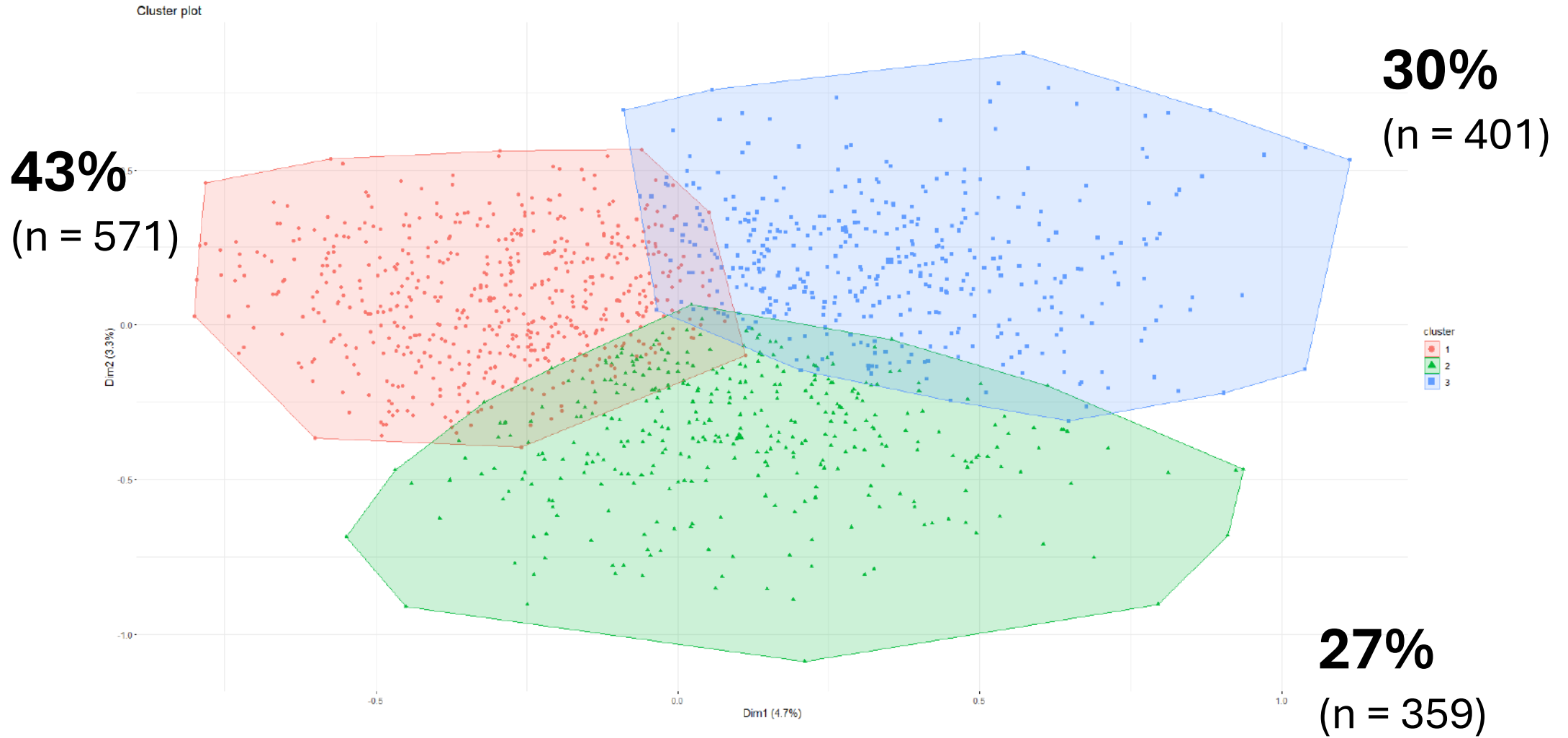




Identify groups of individuals based on shared response profiles

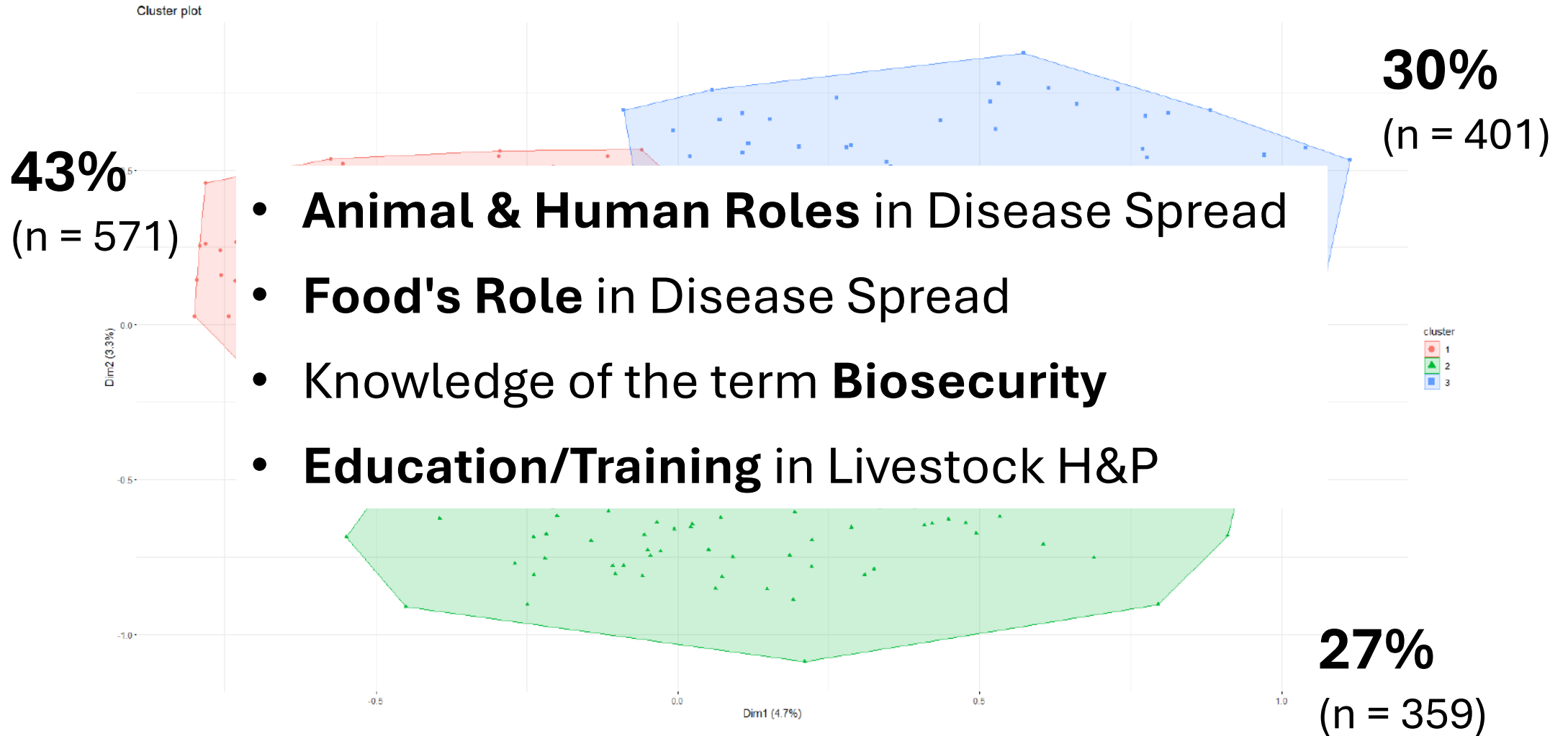
3 clusters identified (MCA & HCPC)

N = 1331



3 clusters identified (MCA & HCPC)

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Animal & Human Roles:

What Is an Issue for Livestock Disease Spread Between Countries?

Cluster 1: 43%



YES

Clusters 2 & 3: 57%



NO



Movement of **people**



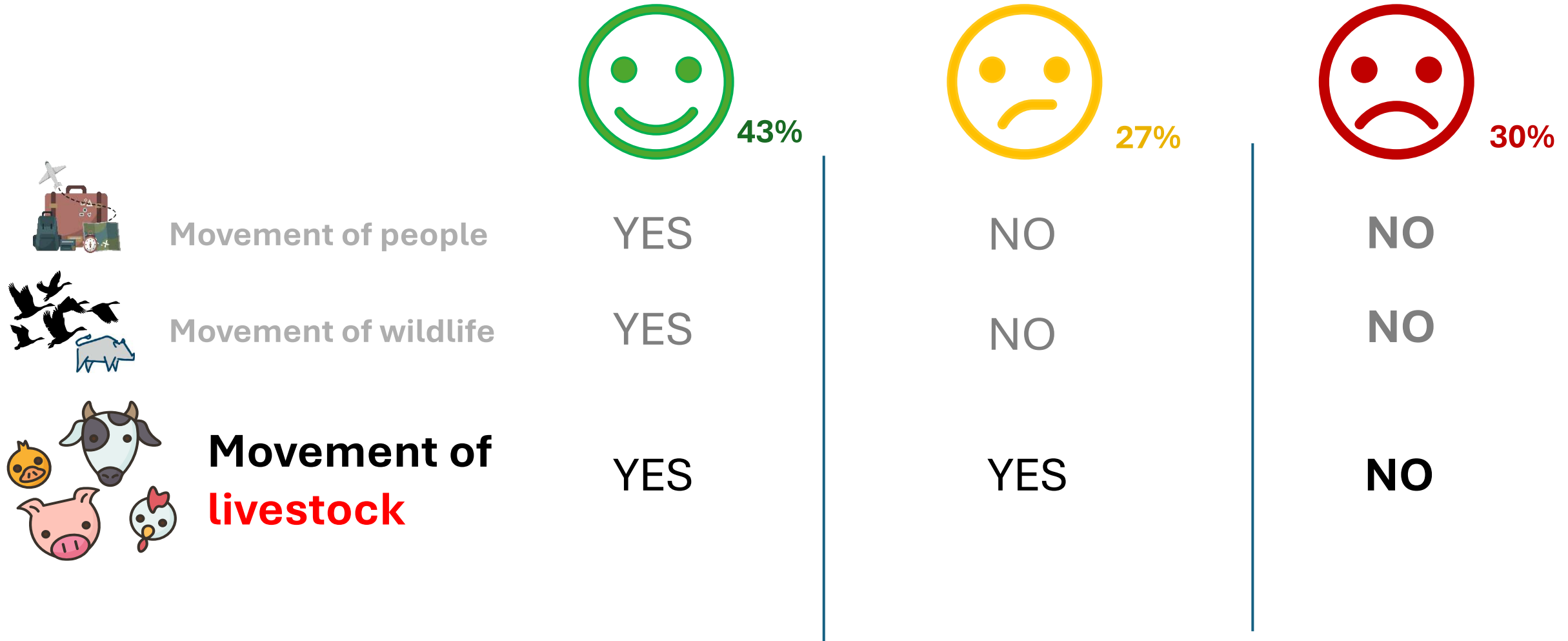
Movement of **wildlife**

YES

NO

Animal & Human Roles:

What Is an Issue for Livestock Disease Spread Between Countries?



Animal & Human Roles:

“How much do you agree with these statements?”

“Disease can spread
**from animals to
humans**”

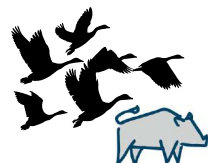


Movement of people

YES

NO

NO



Movement of wildlife

YES

NO

NO



Movement of livestock

YES

YES

NO

Animals → Humans

AGREE

AGREE

DISAGREE

Animal & Human Roles:

“How much do you agree with these statements?”

“Disease can spread **from humans to animals**”

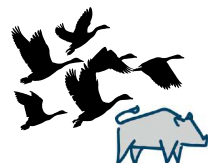


Movement of people

YES

NO

NO



Movement of wildlife

YES

NO

NO





Movement of livestock

YES

YES

NO

Animals  Humans


AGREE

AGREE

DISAGREE

Food's Role:

Do you think the leftovers of food in a picnic area could infect (farm) animals?



**Leftovers
of **food****

YES



Don't Know



NO

Food's Role:

What Is an Issue for Livestock Disease Spread Between Countries?



Leftovers
of food

YES

Don't Know

NO

Food from
abroad

YES

n.s.

NO





BETTER

Knowledge of the term Biosecurity

Have you ever heard of the word “biosecurity”?



Knowledge of Biosecurity



43%

YES, I am sure
what it means



27%

YES, but not sure
what it means



30%

NO

70% participants were uncertain about the meaning or have never heard the term biosecurity



BETTER

Education/Training in animal health and/or production



Training or education in livestock



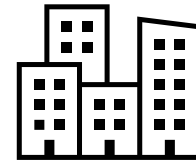


Training or education in livestock

Where people live



Rural and/or
contact



No contact





- **Biosecurity** remains an **unfamiliar** concept to many respondents
- People hold diverse perceptions about how diseases spread and transmission pathways




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 - Others seem to mainly lack of information especially people living in urban areas. 

Conclusion

- **Biosecurity** remains an **unfamiliar** concept to many respondents
- People hold diverse perceptions about how diseases spread and transmission pathways
 - A majority were **unaware** of the **role of wildlife, humans** and food
 - Some people have low awareness of and transmission, prevention and zoonotic potential of diseases 
 - Others seem to mainly lack of information especially people living in urban areas. 
- Training and education make a difference! 

Establish a dialogue among all stakeholders to better tailor training and communication strategies



Farmers



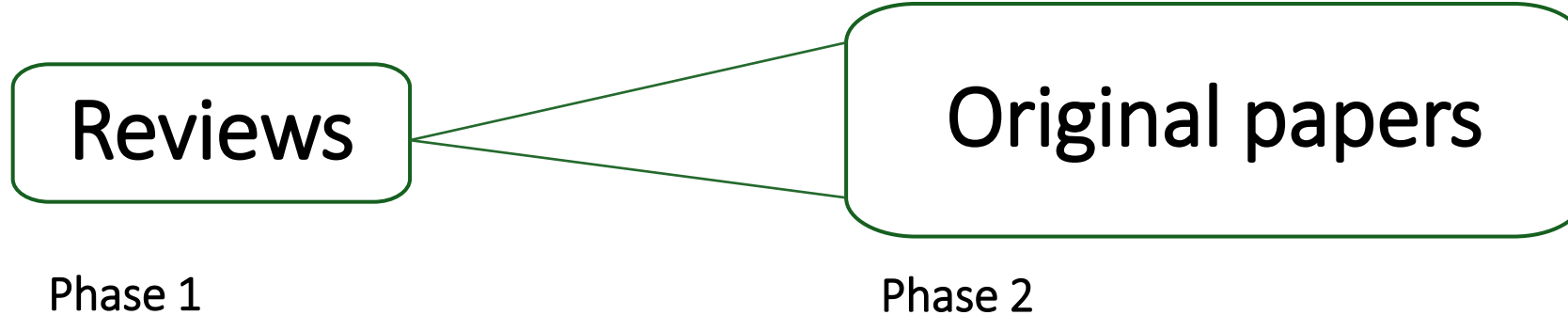
Overview

Social, economic and psychological factors affecting decision making around biosecurity

Dogusan MM, Cardoso De Carvalho Ferreira H, Moya Durán SH, Moskalenko L, Brennan M,
Rodrigues Da Costa M, Ciaravino G, Gaspar R

Methods & Study design

- Timeline: 2000 - 2023
- PubMed, Scopus, WOSCC
- Selection based on the title, abstract and keywords



- **Data extraction: COM-B** (*Capability Opportunity Motivation-Behavior*)
- **Data analysis: TDF** (*Theoretical Domains Framework*)



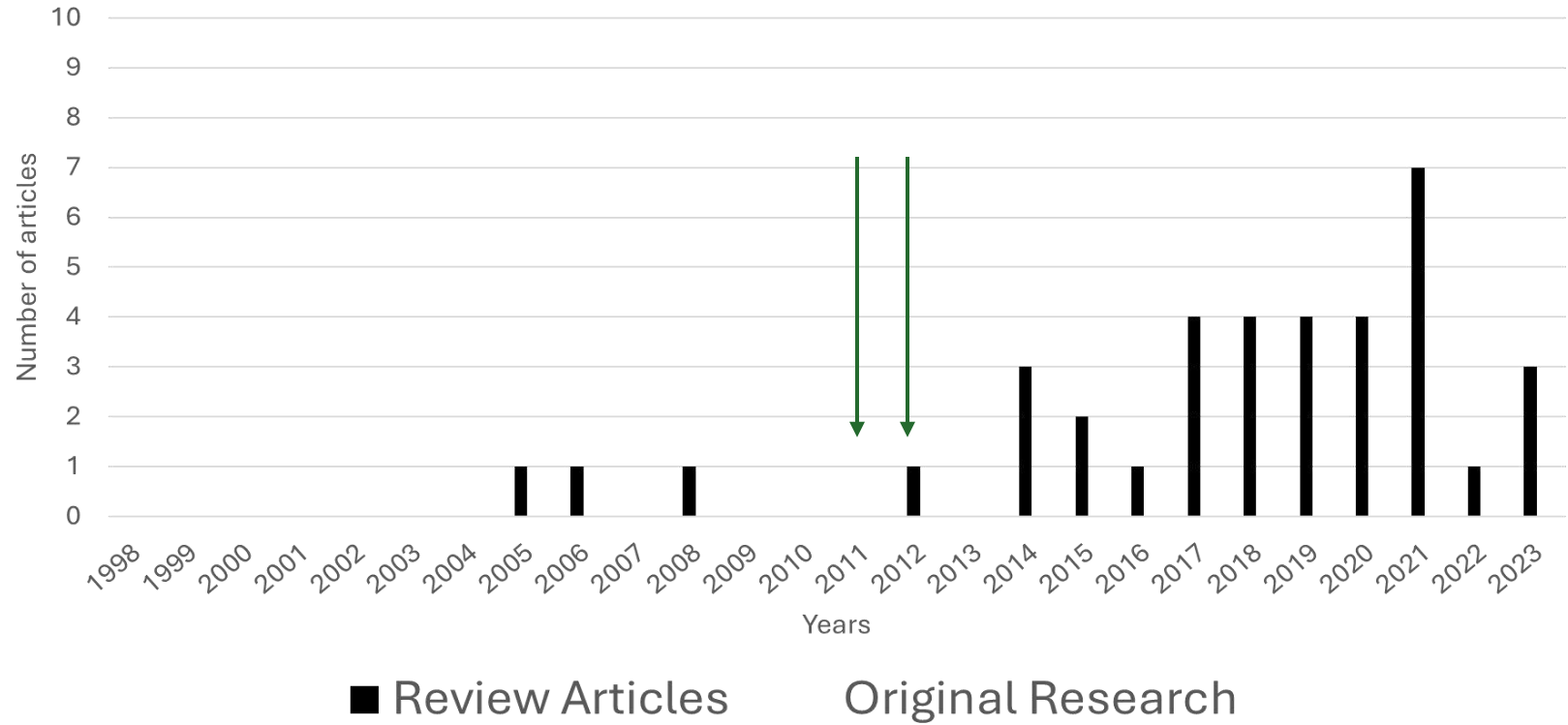
Results

- 811 papers identified
- 354 full-text screened

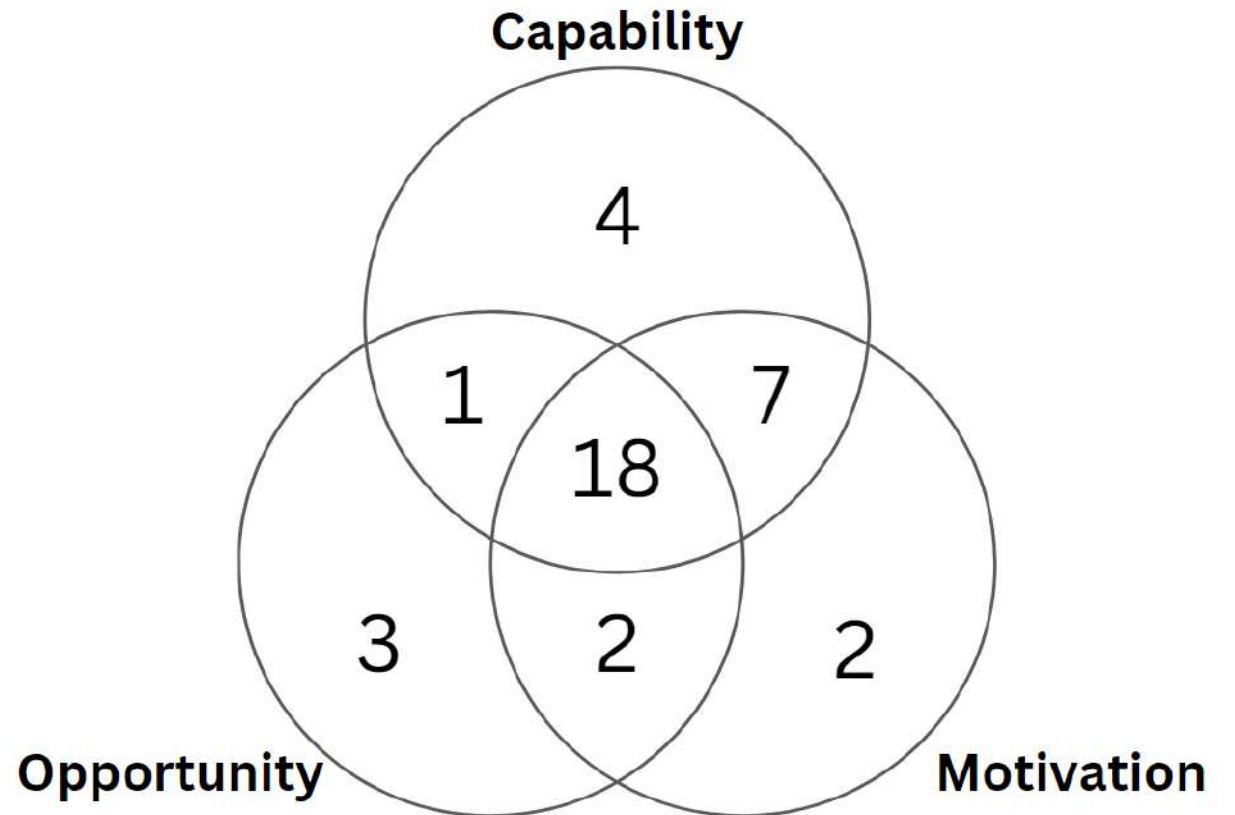
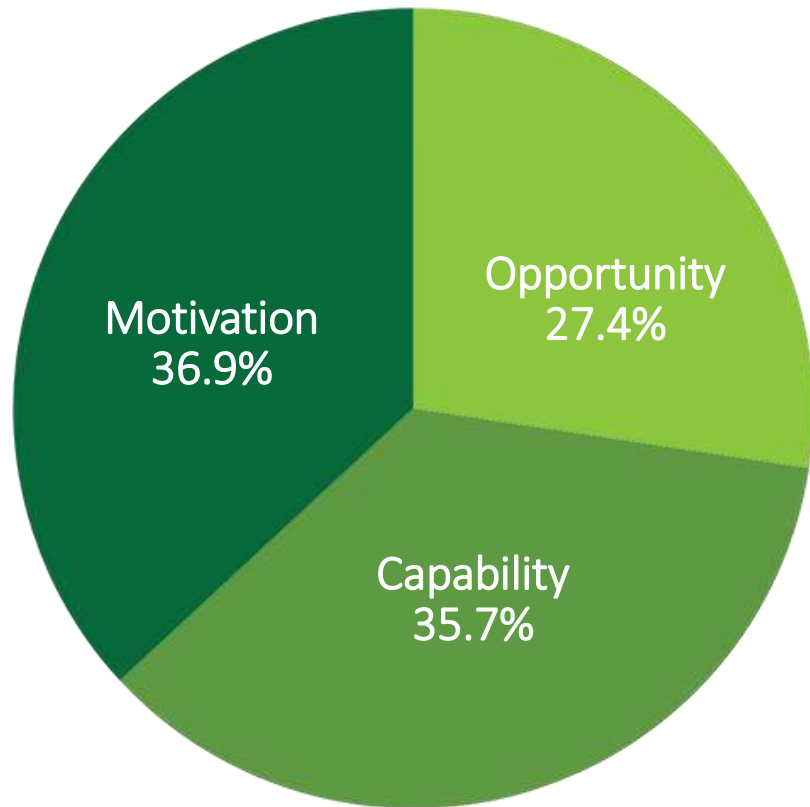
Phase 1:

Review of reviews: **37**

COM-B model & TDF



COM-B model



Results

- 811 papers identified
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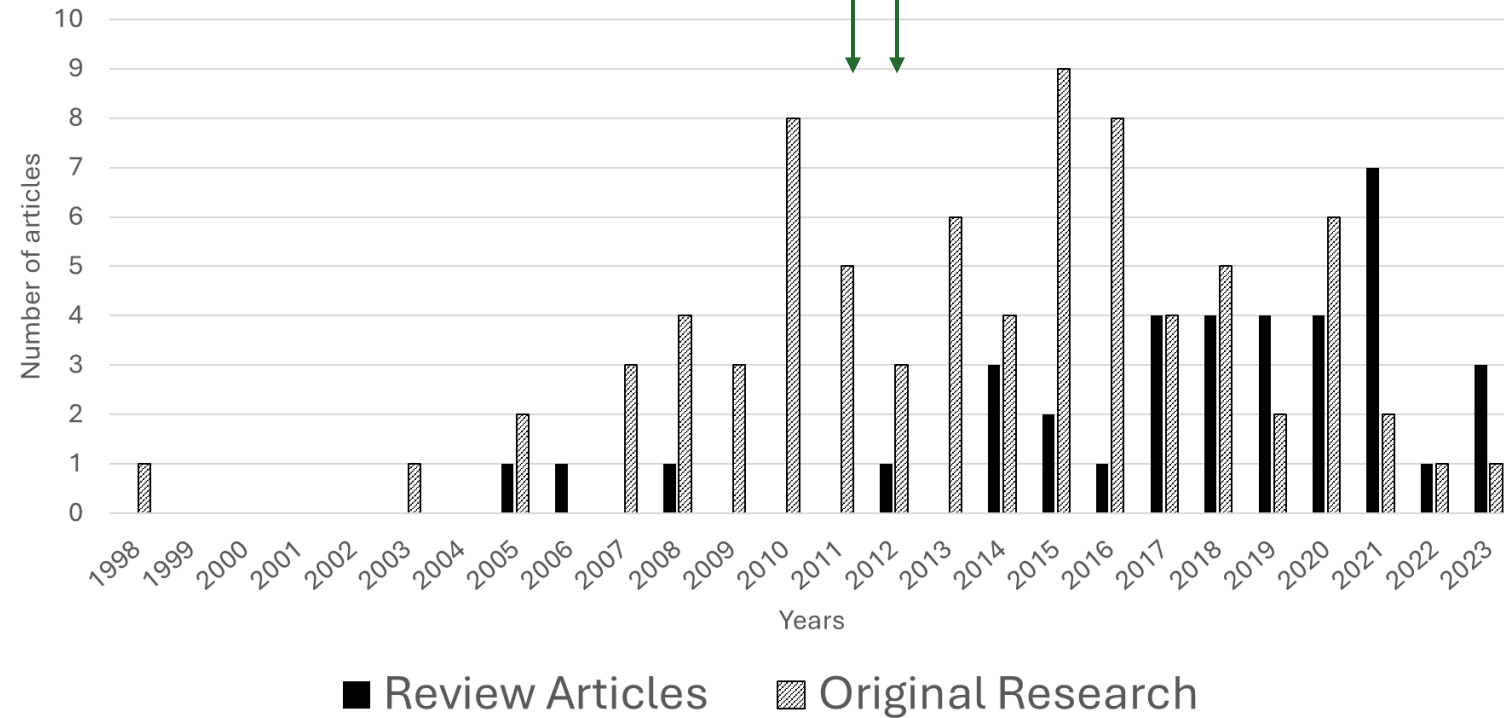
Phase 1:

Review of reviews: **37**

Phase 2:

Cited original papers: **78**

COM-B model & TDF



Original papers (n = 78)

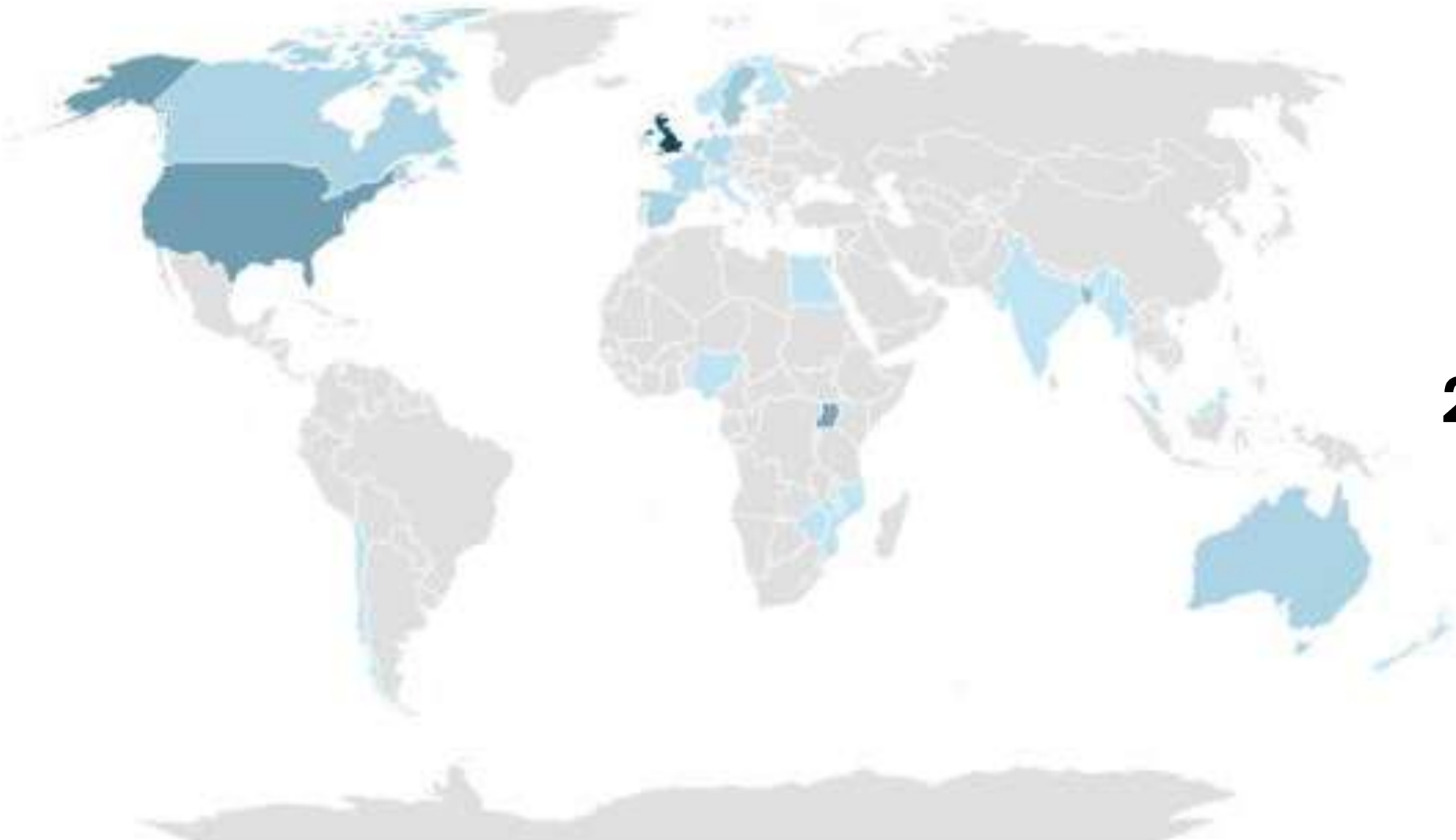


BETTER

Number of papers



27 countries



Targeted stakeholders



Farmers

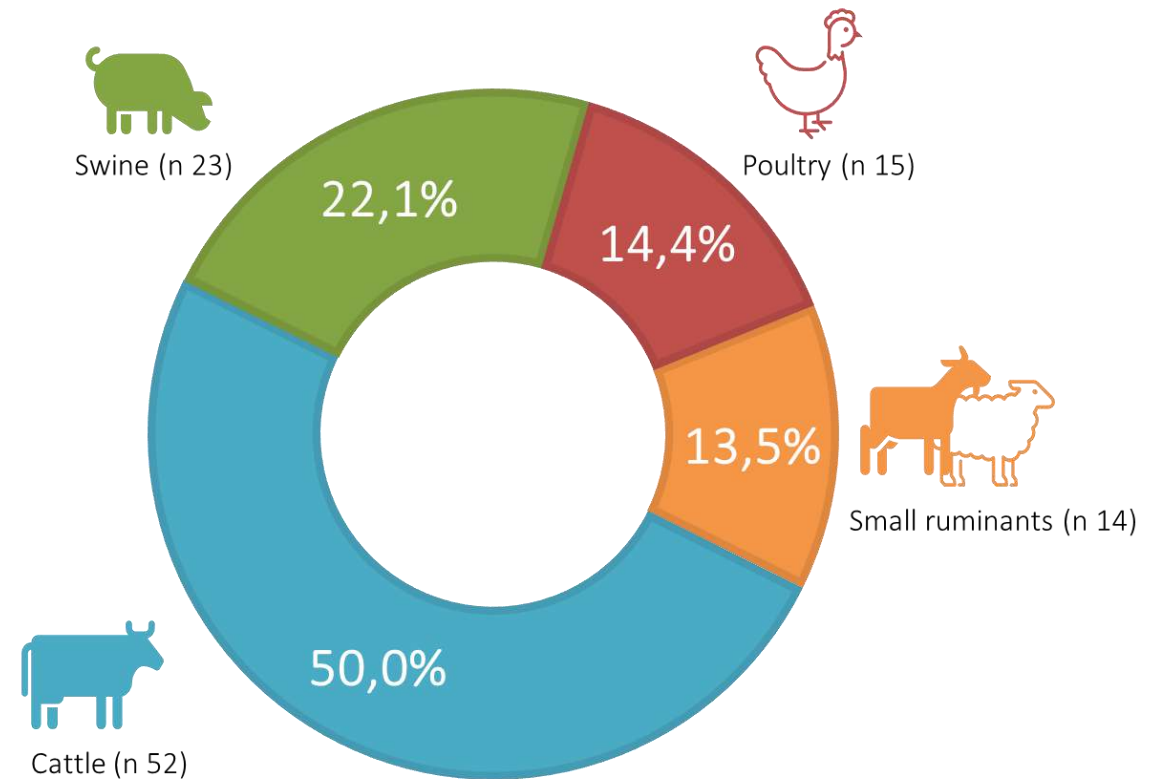
94%



Veterinarians

6%

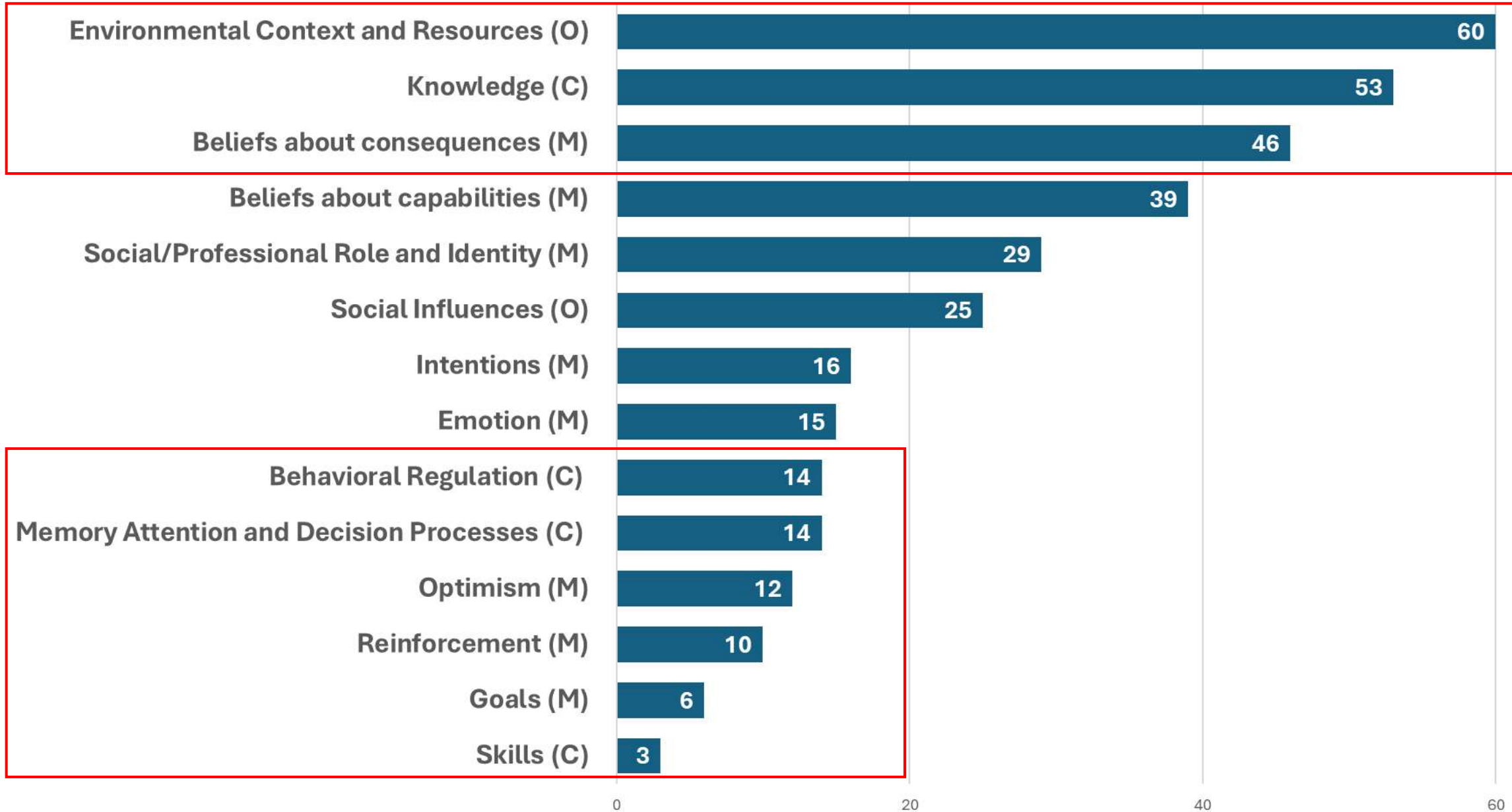
Targeted species



Original papers (n = 78)



BETTER

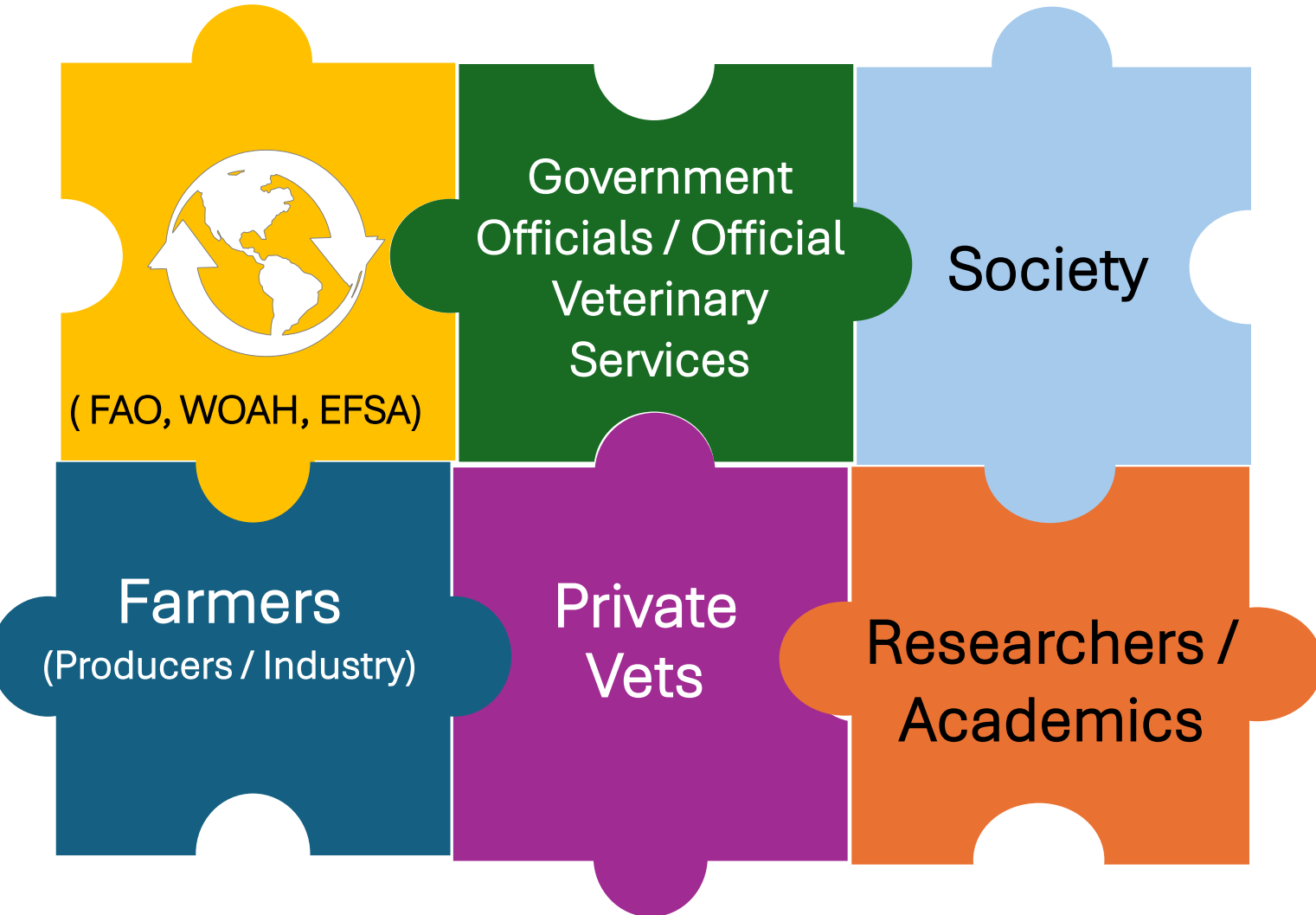


- Capability: mainly on Farmers' knowledge
- Opportunity: often do not consider social influences
- Motivation: mostly beliefs about consequences and about capability
- Skills, Goals and Reinforcement are the least reported domains
- Gaps in some species and geographic areas
- Mainly focusing on farmers behaviors (what about advisors, vets or trader, drivers, hunters and other stakeholders?)

How to improve communication about biosecurity?

Interactions with livestock farmers, veterinarians and other stakeholder

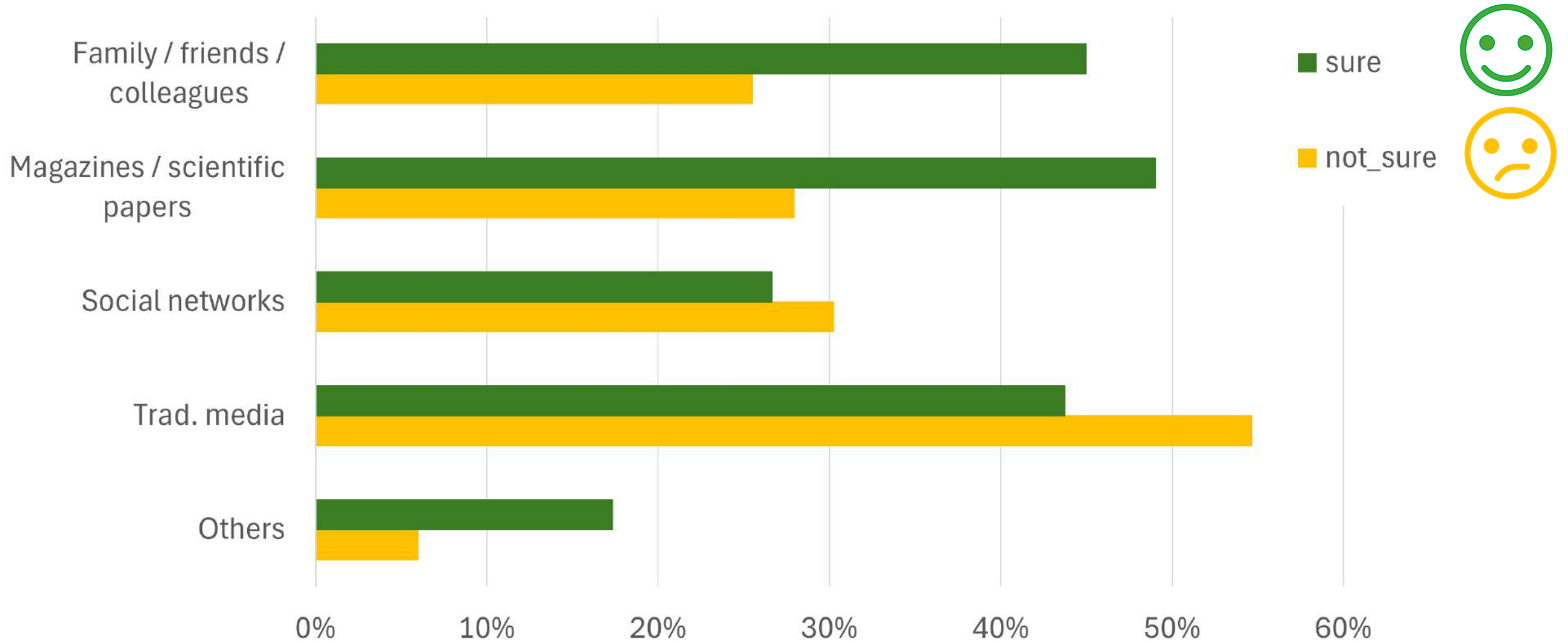
Establish a dialogue among all stakeholders to better tailor training and communication strategies



Establish a dialogue among all stakeholders to better tailor training and communication strategies



Public: *In which scenario you heard biosecurity being discussed?*



Establish a dialogue among all stakeholders to better tailor training and communication strategies



How do **researchers, academics, and government officials** communicate with farmers about biosecurity?



World cafe

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

Moya S, Lamont K, Brennan M,
Ciavarino G, Costa, Allepuz A,
Tamminen LM, Correia-Gomes C, De
Carvalho Ferreira H, Dogusan MM,
Imperial T, De Meneghi D, Kjosevski
M, Chantziaras I and Burrell A



frontiers | Frontiers in **Veterinary Science**

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

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



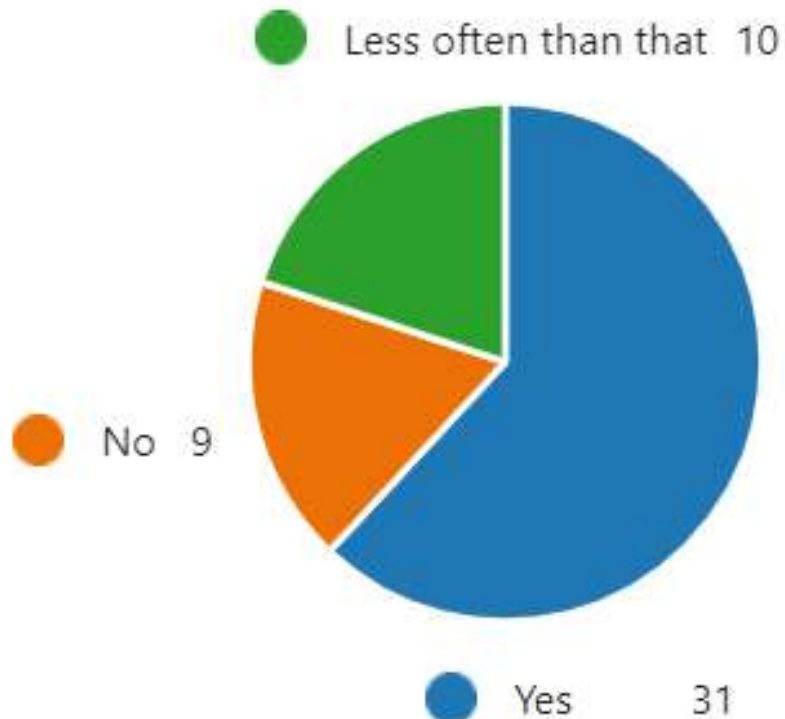
Focus groups

- 3 mostly with academics
- 1 of government officials, private veterinarians, and others



78,4% academic researchers

Do you interact with farmers often?



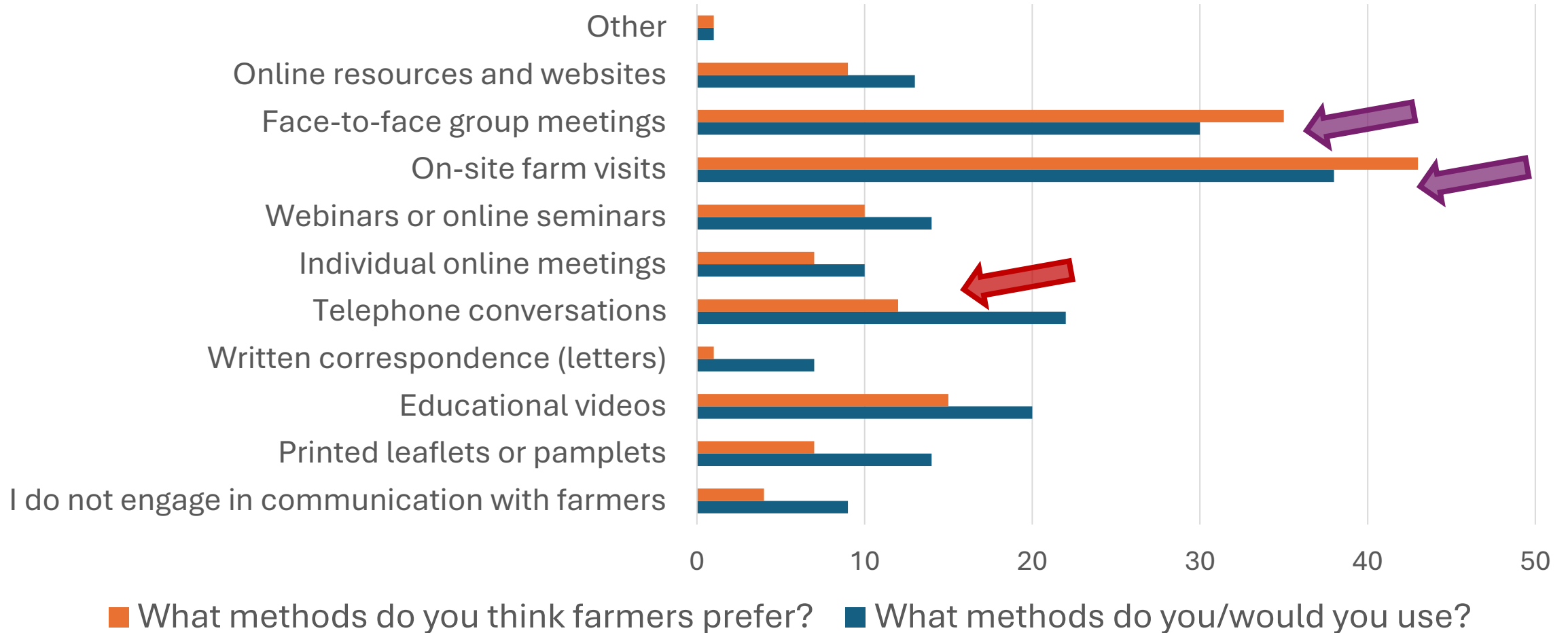
48% ♀ / 52% ♂

42±10 years

22 countries

51 participants

Communicating with farmers



What do you think are the **most effective methods of communication** with farmers?

Optimal system for communicating with farmers to promote a change in behaviour regarding biosecurity



Trusted relationships



Motivational interviewing



Non-verbal communication



Tailored messaging



Multi-channel delivery



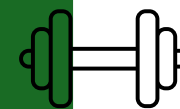
Collaborative planning

Continuous engagement



Accessible resources

Training for advisors



Feedback mechanisms

Gather evidence to develop tailored communication strategies aimed at raise awareness and foster positive biosecurity attitudes



How do **vets** communicate with farmers about biosecurity?



Veterinarians



Survey



Interviews



Workshop



Survey

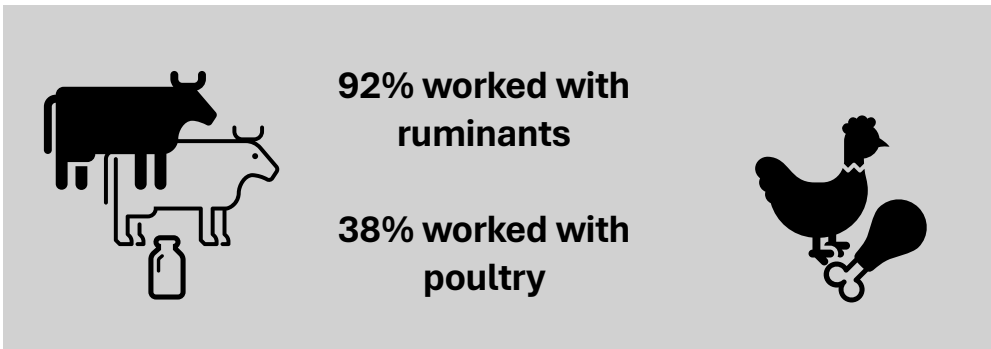
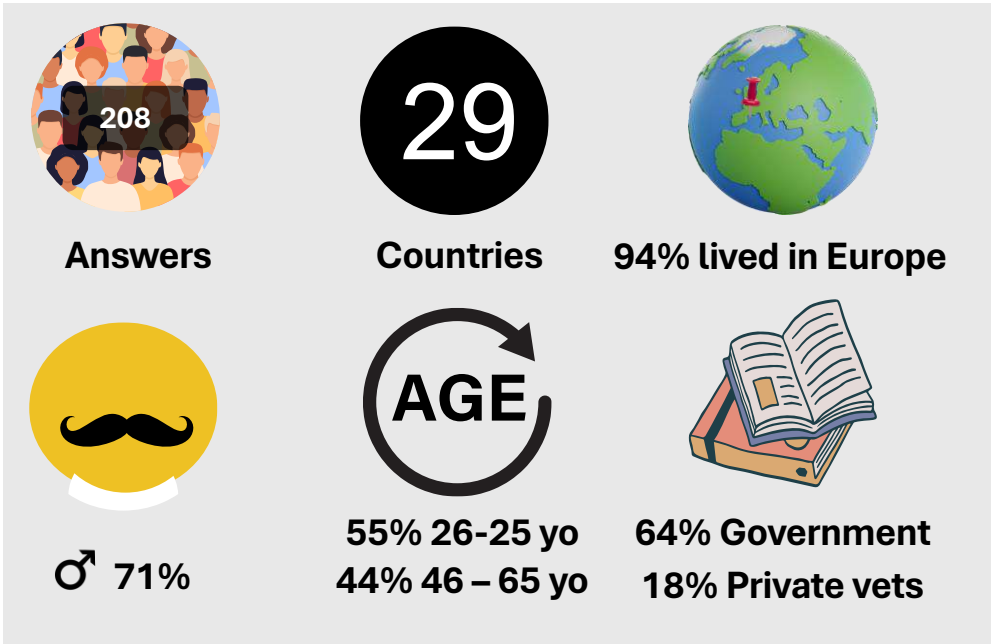


Food and Agriculture Organization
of the United Nations

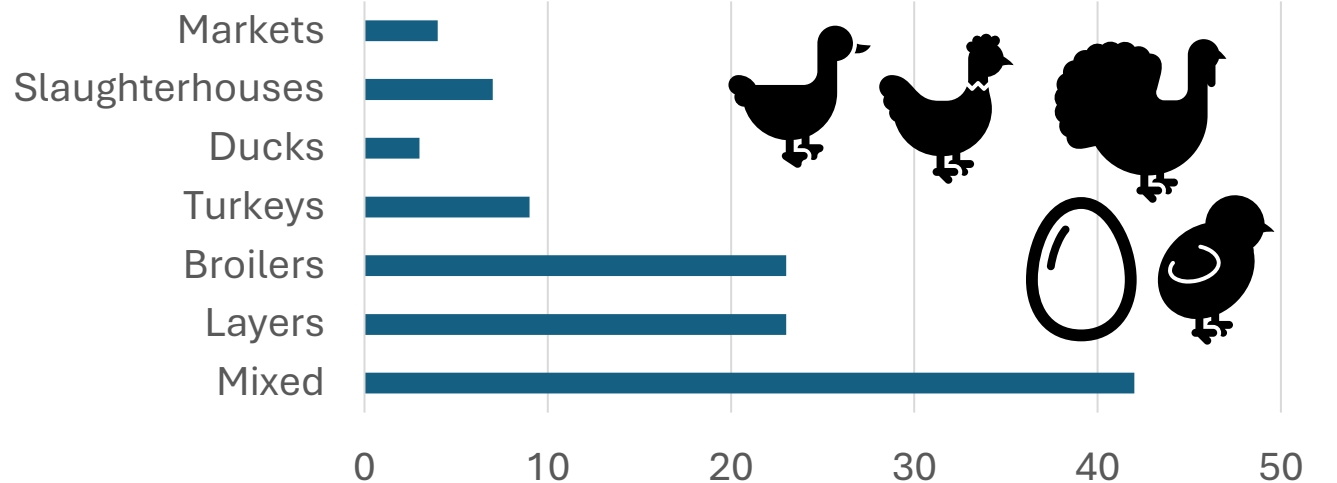
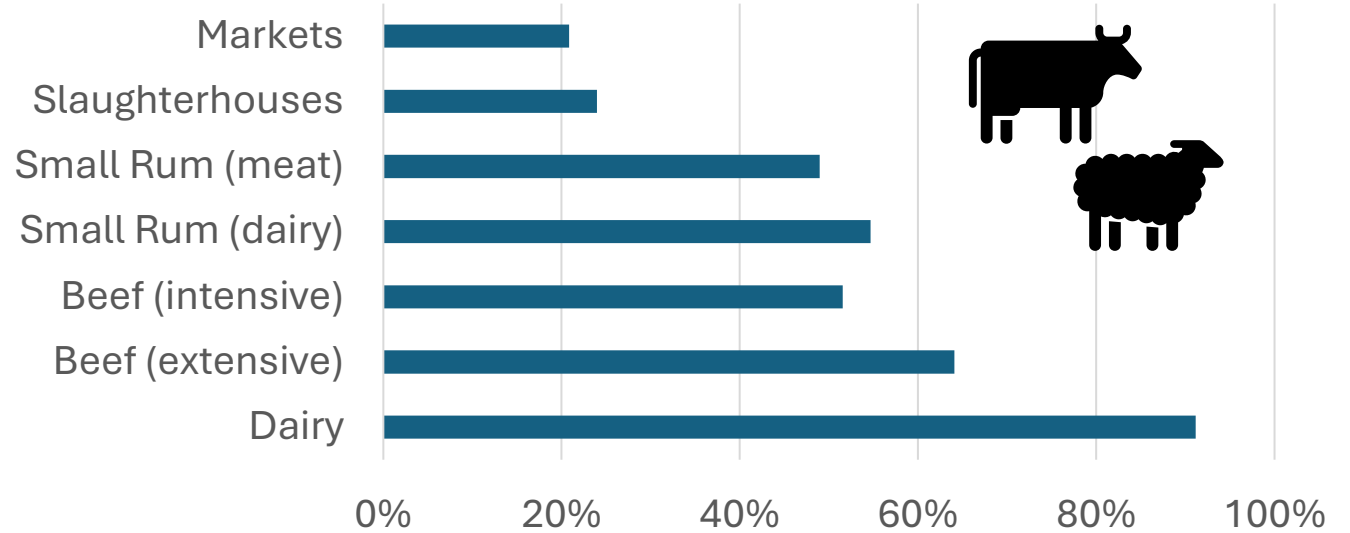


BETTER

Respondent's profile (vets)



Species breakdown





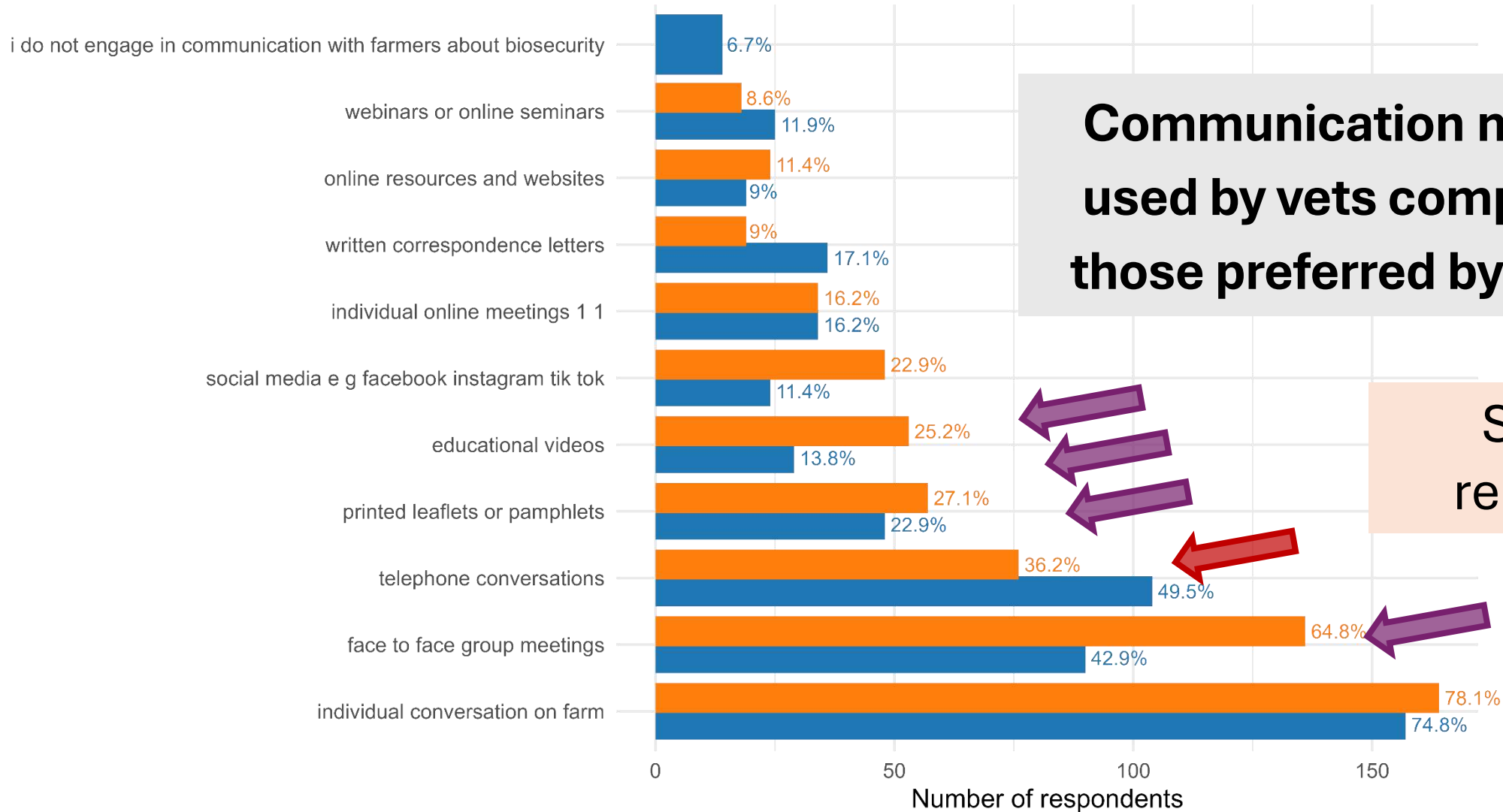
Survey



Food and Agriculture Organization
of the United Nations



BETTER



Communication methods used by vets compared to those preferred by farmers

Similar to researchers

Used by Vets What vets think farmers prefer



Survey



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of the United Nations



BETTER

How do you decide which methods to use?

Interpersonal relationships

- interest and or availability of the farmer
- your relationship familiarity with the farmer



- availability of pre existing materials

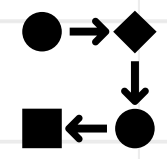
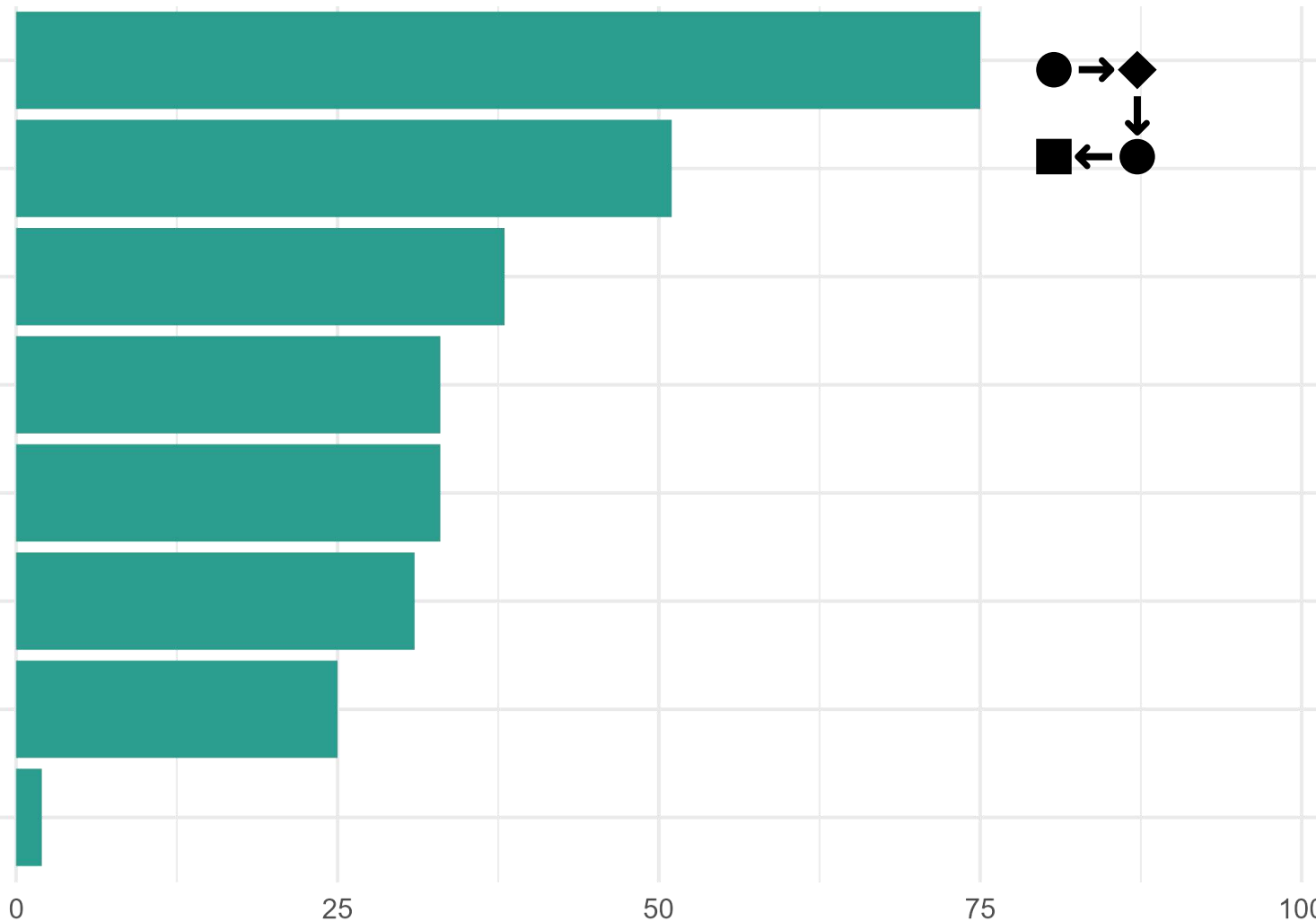
cost and resources available

content of the message

complexity of the message

your time constraints

other



Number of respondents



Survey

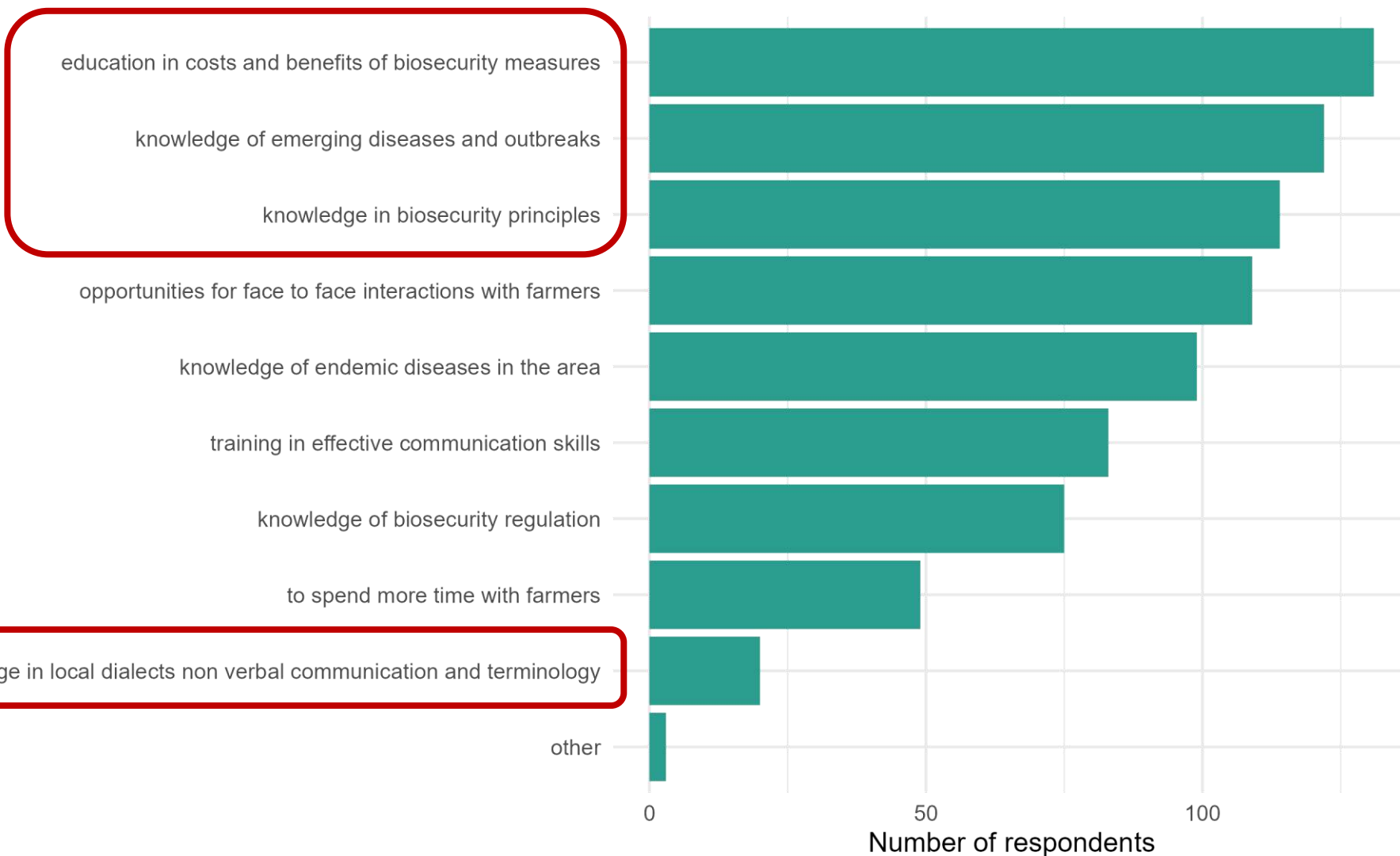


Food and Agriculture Organization
of the United Nations



BETTER

Which would help you to be more effective for your communication?

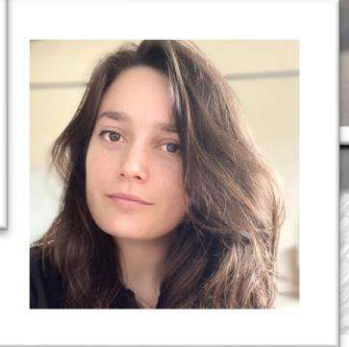
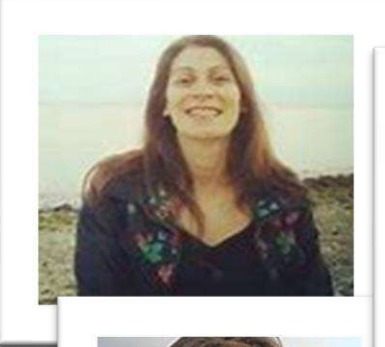


- **Trusted, Relationship-Based Communication** is central — not just what is said, but *who* says it and *how*.
 - **Common Ground:** Vets, researchers, and officials broadly agree on tools used, but there are discrepancies with what farmers might actually prefer.
 - **Practical Barriers:** Communication choices are often shaped by interpersonal rapport and resource availability — not necessarily effectiveness, costs, or time.
 - **Gap in Skills Recognition:** Vets prioritise knowledge/education. Communication and delivery skills (e.g. language, clarity, empathy) are undervalued — highlighting a disconnect.
 - **Education ≠ Communication:** Access to materials and information is vital — but awareness and effective delivery are equally important.
- ✅ **What we should focus on:** Training that combines biosecurity knowledge with communication skills, tailored to farmer preferences and contexts.

  Mixed methods

How do **farmers** prefer to receive
communication about biosecurity?

WORK IN PROGRESS



Our team

... and many, many more!

Thank you!



CA20103



This study is based upon work from COST Action BETTER, CA20103, supported by COST (European Cooperation in Science and Technology).