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BETTER

Exploring the impact of biosecurity – a scoping review

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Biosecurity Enhanced Through Training Evaluation and Raising Awareness

The **BETTER** COST Action will evaluate how biosecurity is currently used and will use participative approaches to understand motivators and barriers for biosecurity implementation.

KNOW MORE



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www.better-biosecurity.eu

WG1

Mapping biosecurity measures applied on farms and transport across Europe

The **first working group** will address how biosecurity measures are applied in Europe and neighbouring countries, and will identify ways for improvement, especially in production systems where there is a lower level of implementation or in settings where biosecurity is more challenging to carry out.

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WG2

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

In the **second working group**, the Action aims to scale-up the knowledge and experience of different types of stakeholders. This is highly relevant as any training or communication strategies for end-users should be based not only on science but also on the understanding of why stakeholders behave the way they do.

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WG3

Methods for evaluation of biosecurity and benefits of its implementation

The **third working group** will focus on identifying the existing methods used to evaluate biosecurity. At present, methodologies are diverse and have not been compared comprehensively. Such methods can be useful as educational tools and for developing skills in risk-based prioritisation as well as to provide quantitative goals and benchmarks which can be used to position the farm with respect to others.

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WG4

Training and dissemination

The **fourth working group** aims to increase the number of professionals, such as veterinarians and farmers, trained in biosecurity and to develop guidelines and good practices for evidence-based effective communicative strategies for different stakeholders. This is a relevant challenge due to the lack of formal education on this issue.

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Search published, peer reviewed literature:

- How is biosecurity assessed?
- What impacts of biosecurity are studied?



"Scoping literature review"

OpenArt

Scoping review (following Prisma-ScR checklist)

Define research questions + inclusion/exclusion criteria



The study includes:

- An assessment of biosecurity on farm

And/Or

- An evaluation of the impact of biosecurity implementation on farm



Peer-reviewed journal
Language (english)
Adoption or perceptions

Scoping review (following Prisma-ScR checklist)



BETTER

Define research questions + inclusion/exclusion criteria

Design search terms and check retrieval of key papers

Population:

“Production animal*” OR livestock OR fattening OR breeding OR farm OR herd) OR (pig OR swine OR poultry OR chicken OR broiler OR “layer hen*” OR “laying hen*” OR flock OR cattle OR dairy OR beef OR fish OR mussels OR mollusk)

Concept:

Biosecurity OR Bio-security

Context:

level OR assessment OR assess* OR evaluation OR benefit* OR consequence* OR impact OR cost* OR financial OR *economic))

Scoping review (following Prisma-ScR checklist)

Defining research questions + inclusion/exclusion criteria

Design search terms and check retrieval of key papers

Perform search in 4 databases (2022-11-24)

Records identified from*:

Web of Science = 2685

CABI abstracts = 3151

Medline = 1720

Scopus = 2595

Total = 10 108

Records removed *before screening*:

Duplicate records removed
(n = 5807)

Records marked as ineligible
by automation tools (n = 26)

Records removed for other
reasons (n = 427)

Records screened by title and
abstract
(n = 3848)

Scoping review (following Prisma-ScR checklist)

Defining research questions + inclusion/exclusion criteria

Design search terms and check retrieval of key papers

Perform search in 4 databases

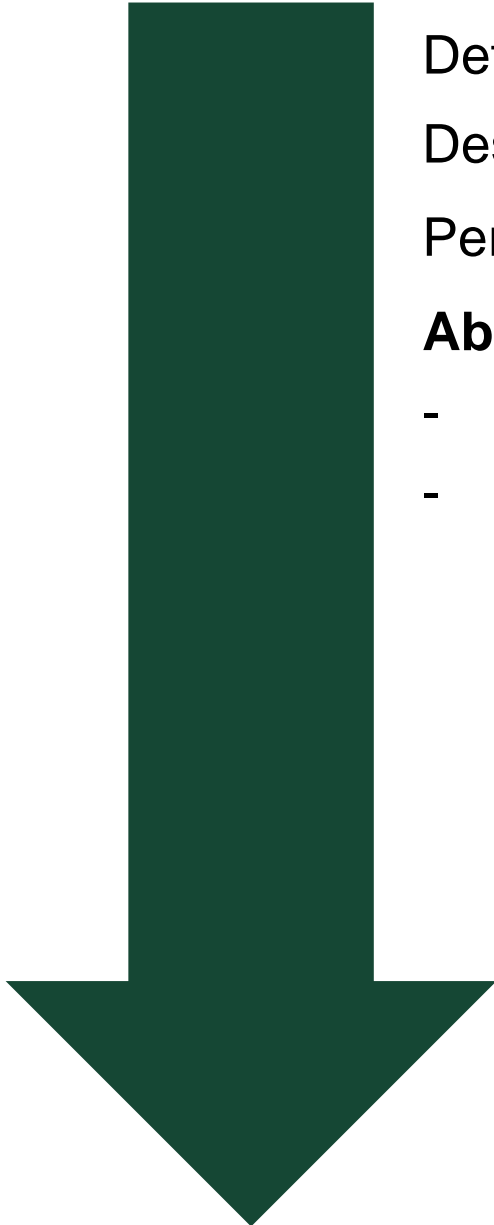
Abstract and title screening

- 2 reviewers per article
- Conflicts solved in group

Records screened by title and
abstract
(n = 3848)



943 abstracts

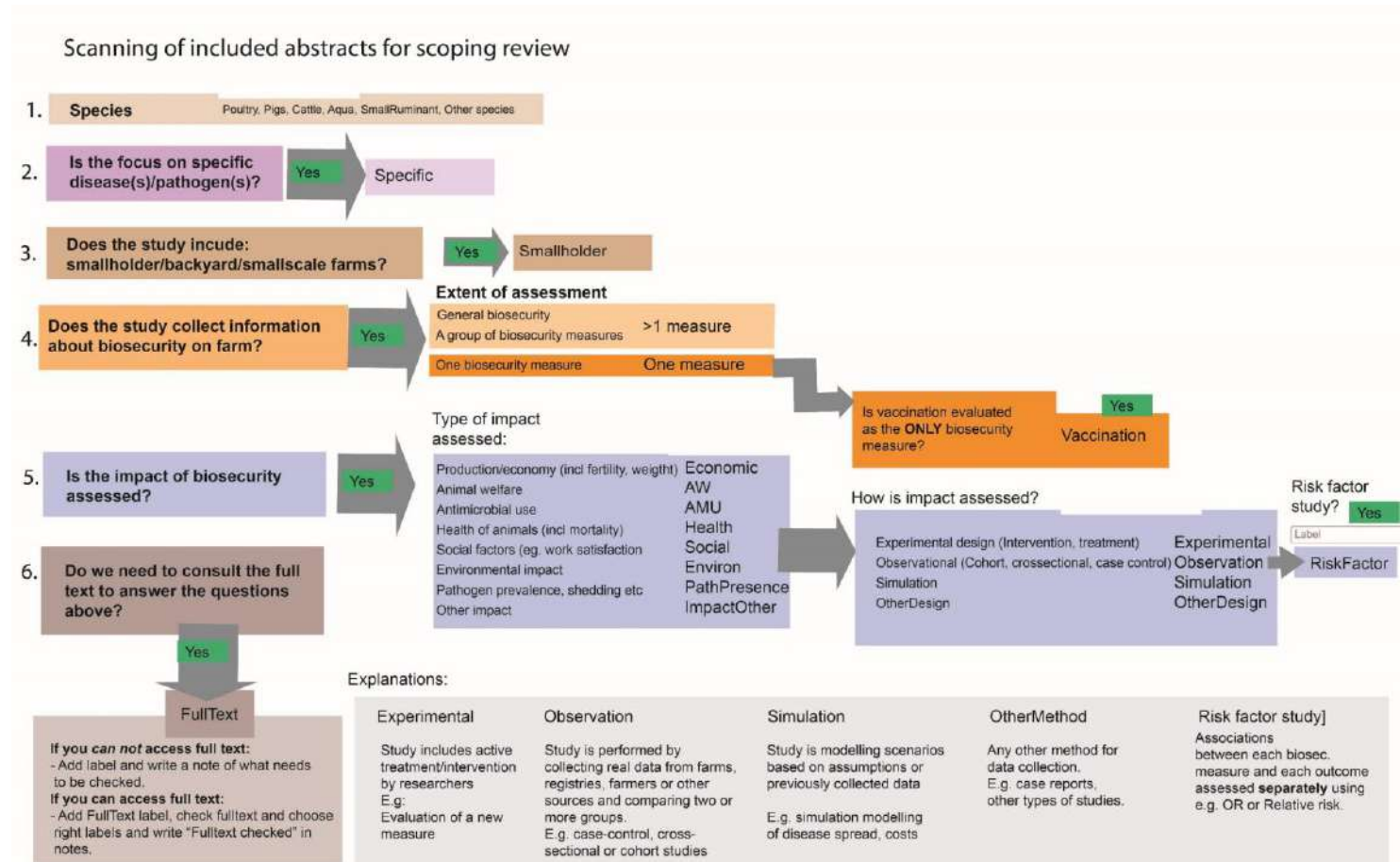
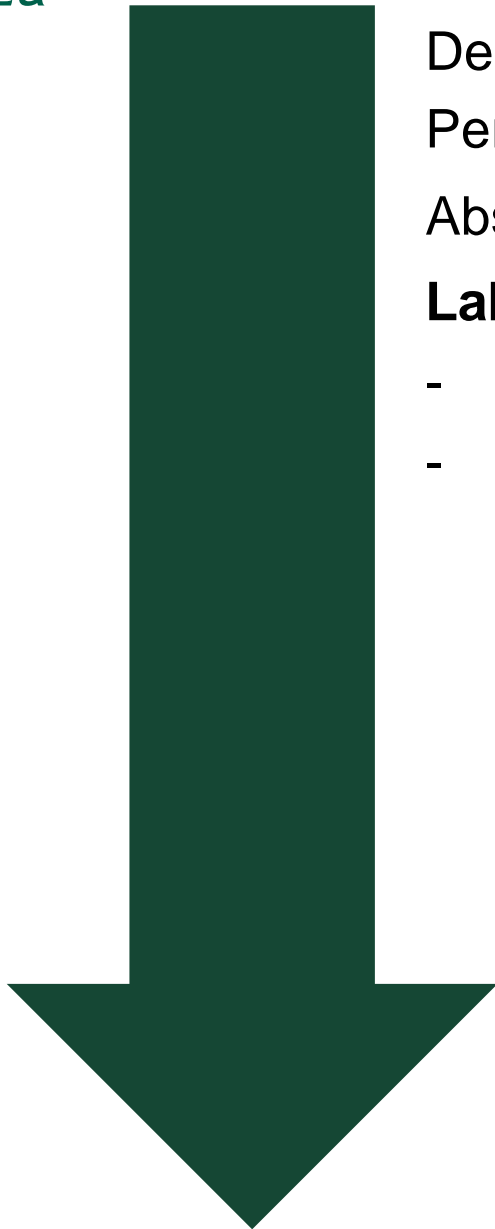


Scoping review (following Prisma-ScR checklist)

- Design search terms and check retrieval of key papers
- Perform search in 4 databases
- Abstract and title screening

Labelling of included articles based on abstract

- 2 reviewers/article
- Conflicts resolved



Scoping review (following Prisma-ScR checklist)

Design search terms and check retrieval of key papers

Perform search in 4 databases

Abstract and title screening

Labelling of included articles based on abstract

Full text - Additional labels (assessment) and quality control (*ongoing*)

Studies included in review
(n = 663)

Scoping review (following Prisma-ScR checklist)

Design search terms and check retrieval of key papers

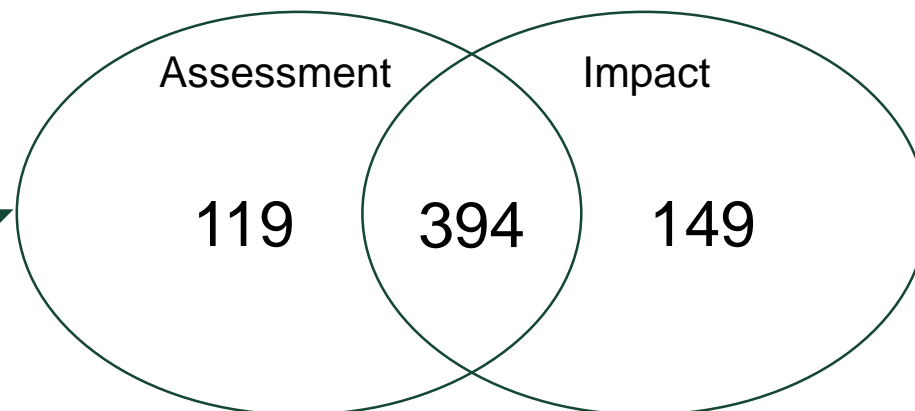
Perform search in 4 databases

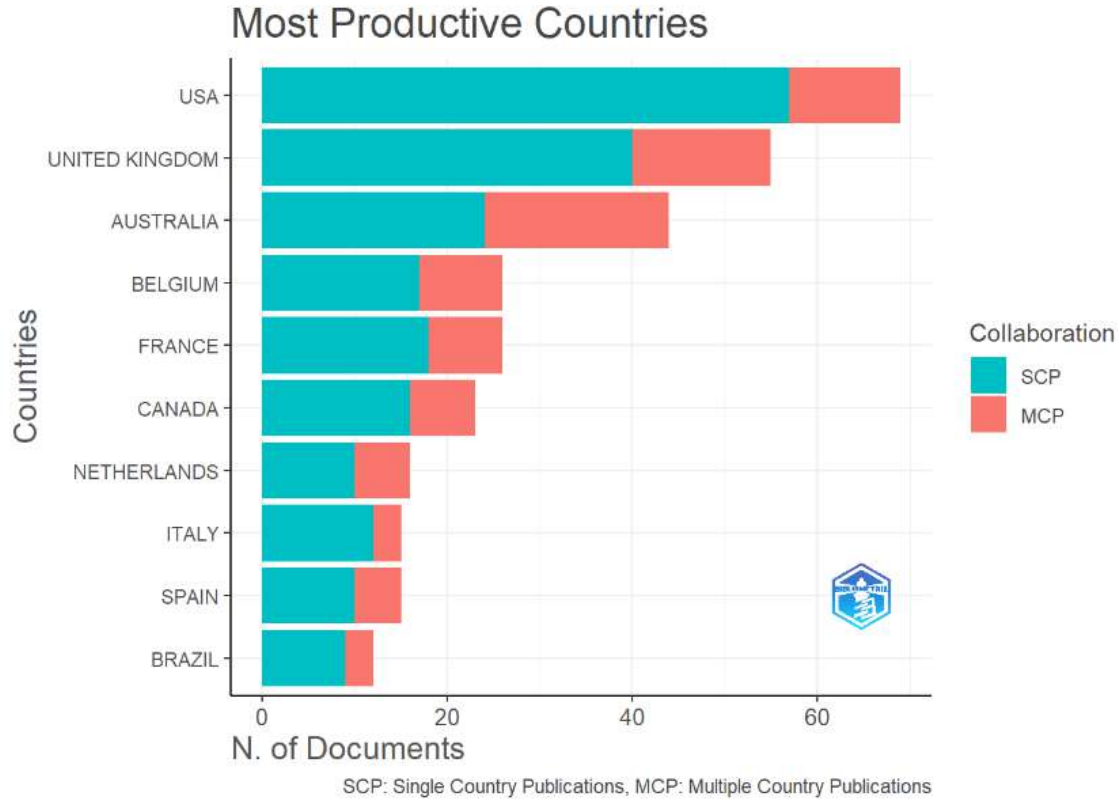
Abstract and title screening

Labelling of included articles based on abstract

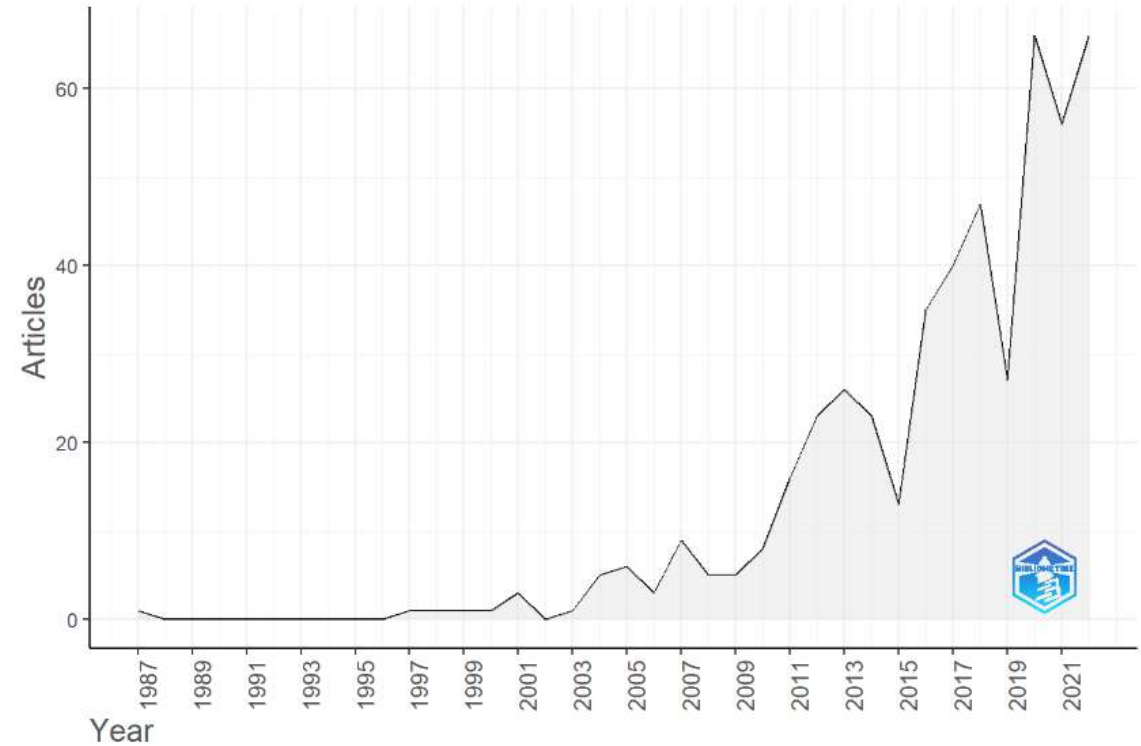
Full text - Additional labels (assessment) and quality control (*ongoing*)

Studies included in review
(n = 662)



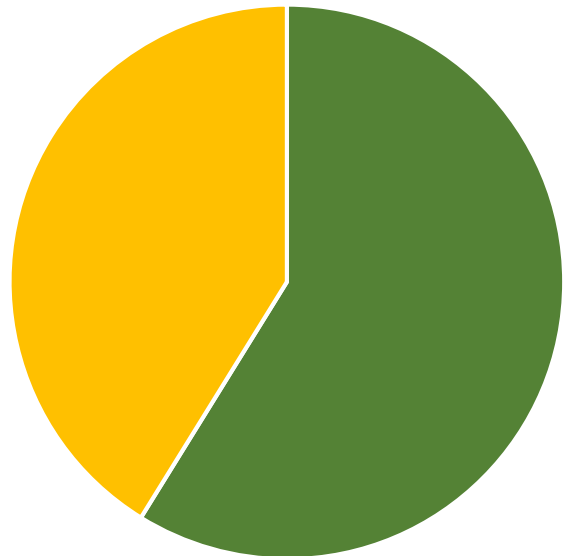


Annual Scientific Production

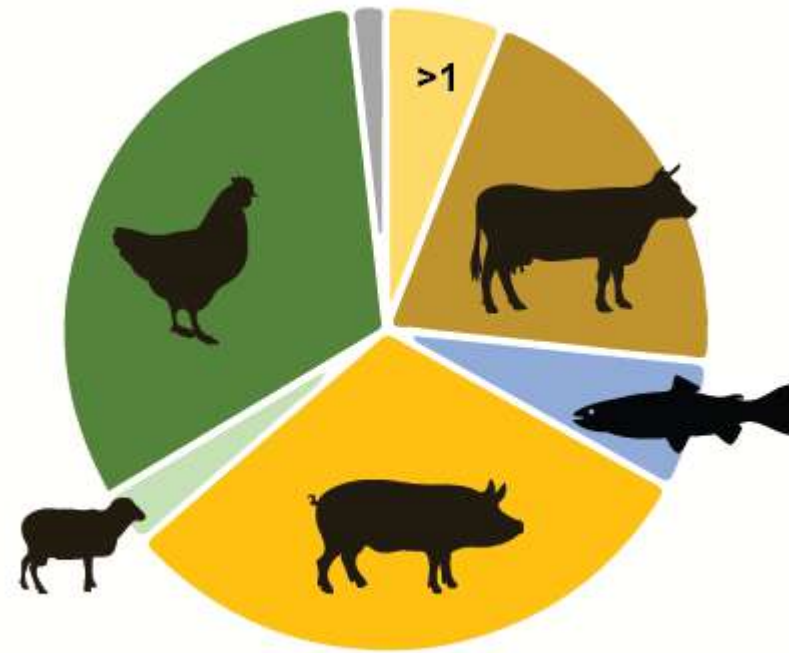


Biosecurity is studied in disease and species specific context

Disease specific

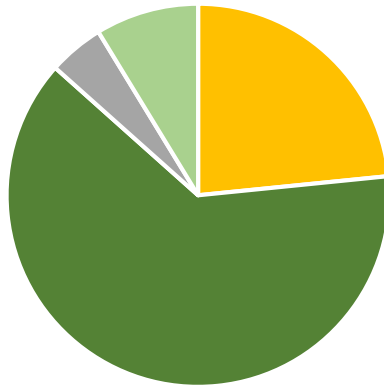


■ Yes ■ No



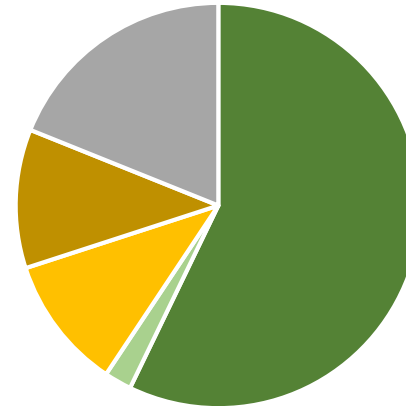
How is assessment of biosecurity performed?

How?



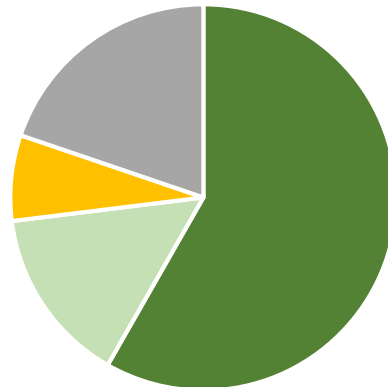
- Existing method
- Own method
- Uncertain
- Development

Contact with farmer



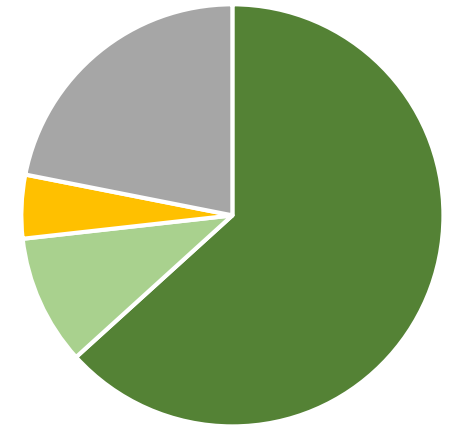
- Face to face
- Survey (online/postal)
- Uncertain
- Phone
- Mix

Where?



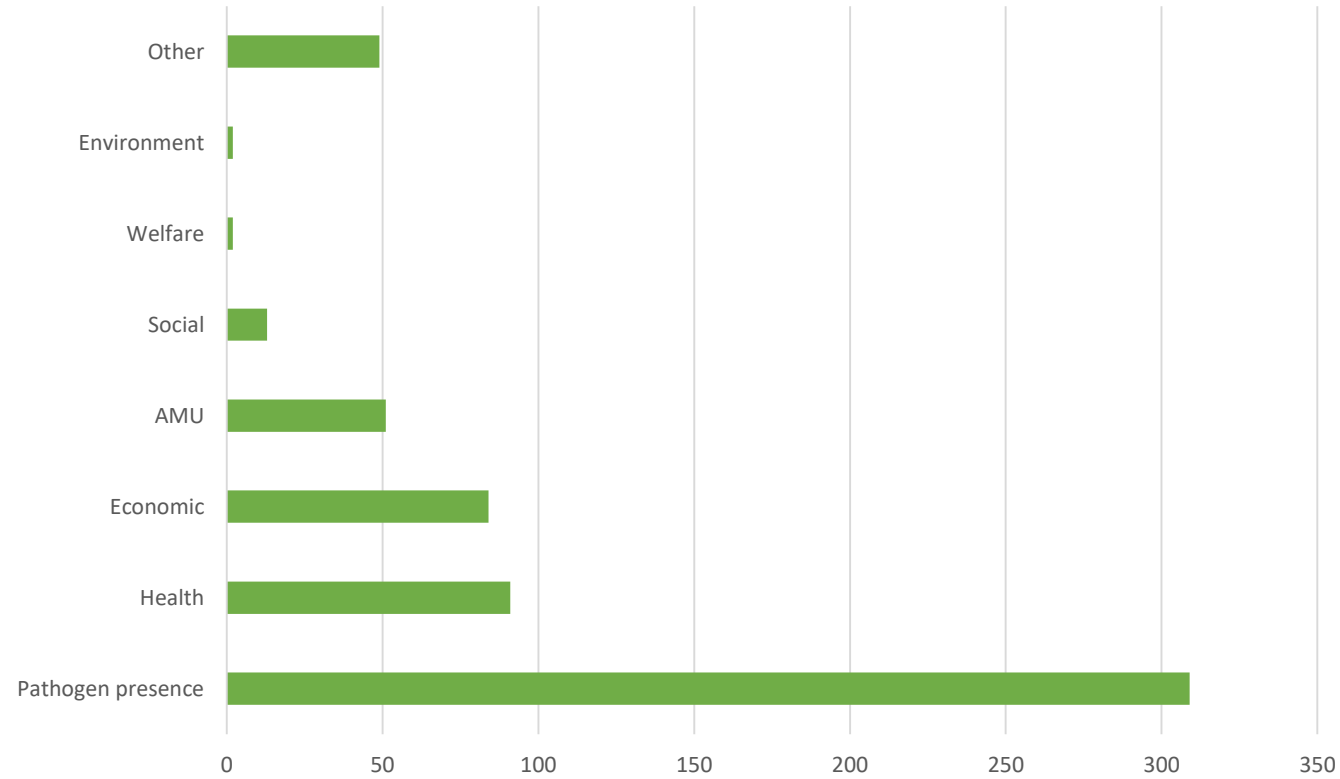
- Farm visit
- Remotely
- Remotely + farm visit
- Uncertain

Assessor



- External
- Internal
- Middle person
- Uncertain

Areas of impact investigated



Take home messages

- Biosecurity is currently considered in relation to specific diseases
- Comparisons between studies are difficult
- Is a more holistic perspective needed?

Thank you for listening!