



EUPHRESKO III

Network for phytosanitary
research coordination and funding

The Plant Health Research Priorities for Northern Europe

Baldissera GIOVANI, PhD



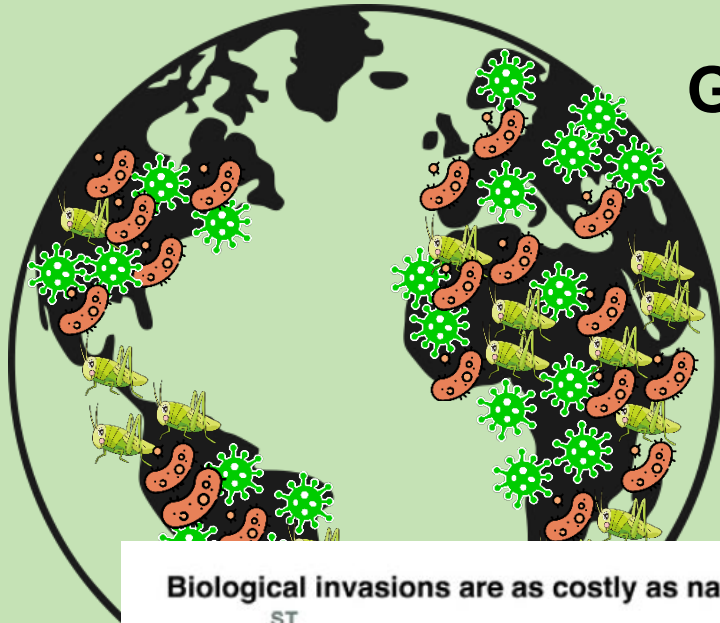
This project has received funding from the European Union's HORIZON-WIDERA-2023-ERA-01-01 under grant agreement No 101130467



We are at war!



A problem that is growing



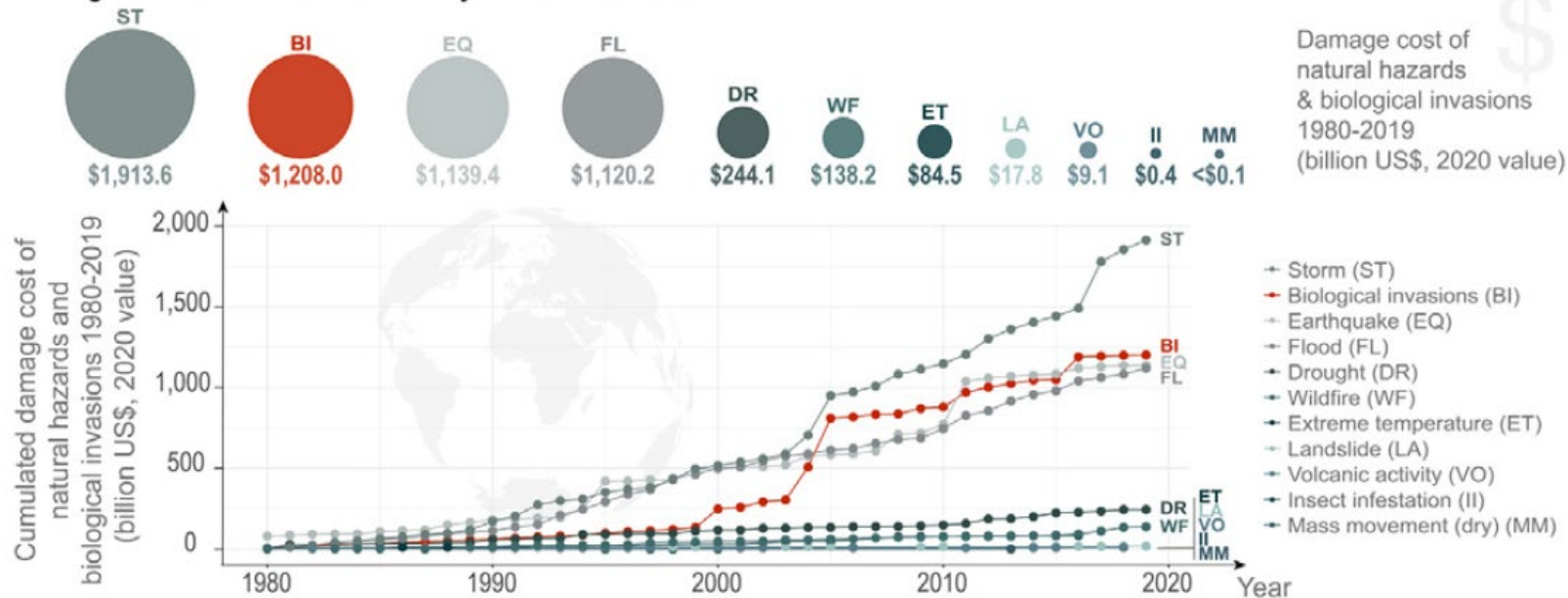
Globalization and movement of people

Trade

Climate change

Turbelin *et al.*, 2023

Biological invasions are as costly as natural hazards



How to address the problem?

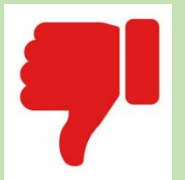


Research

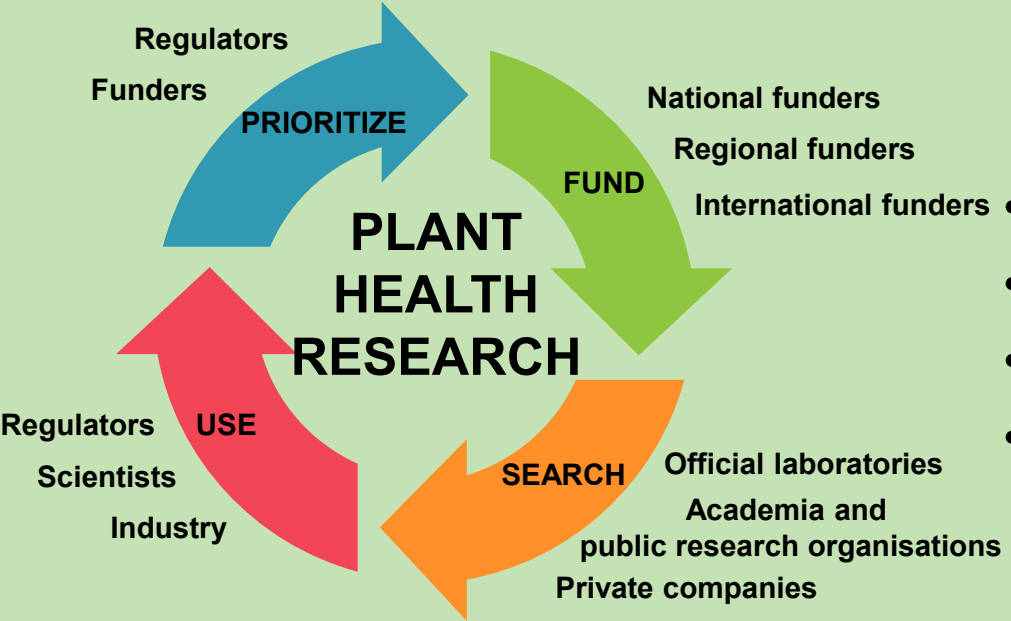
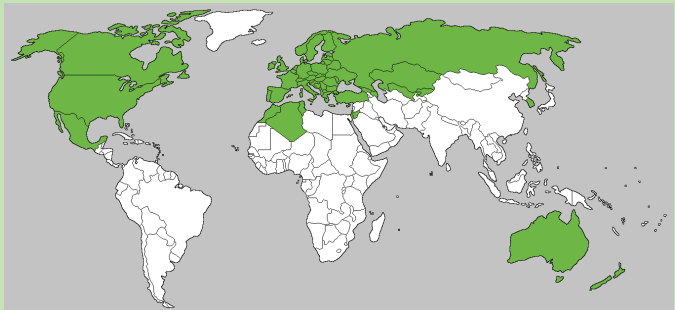


Regulation

- Coordination at EU level for the development of EU Plant Health policy
- No coordination of national phytosanitary research programmes to underpin these activities
- The services providing the scientific expertise increasingly lack staff, funds and training



Research coordination and collaboration are key



- The place where the most recent information can be found
- The place to discuss PH topics
- The place where 'business' can be done
- The place that everybody interested in PH research refers to

The success of Euphresco as a primarily European network has set the ground for discussions on the development of initiative(s) to address the needs of other regions of the world and on global phytosanitary research coordination

2019



'to strengthen research collaboration to develop effective measures against transboundary pests and to participate in joint funding networks such as Euphresco'

2020



'a global network for phytosanitary research coordination that can shape research agendas across countries and accelerate the development of science to support regulatory phytosanitary decision makers'

2021

Strategic Framework
for the International Plant
Protection Convention (IPPC)
2020-2030

'by 2030 possibilities for establishing an international research collaborative structure have been explored and, if appropriate, the structure has been established'

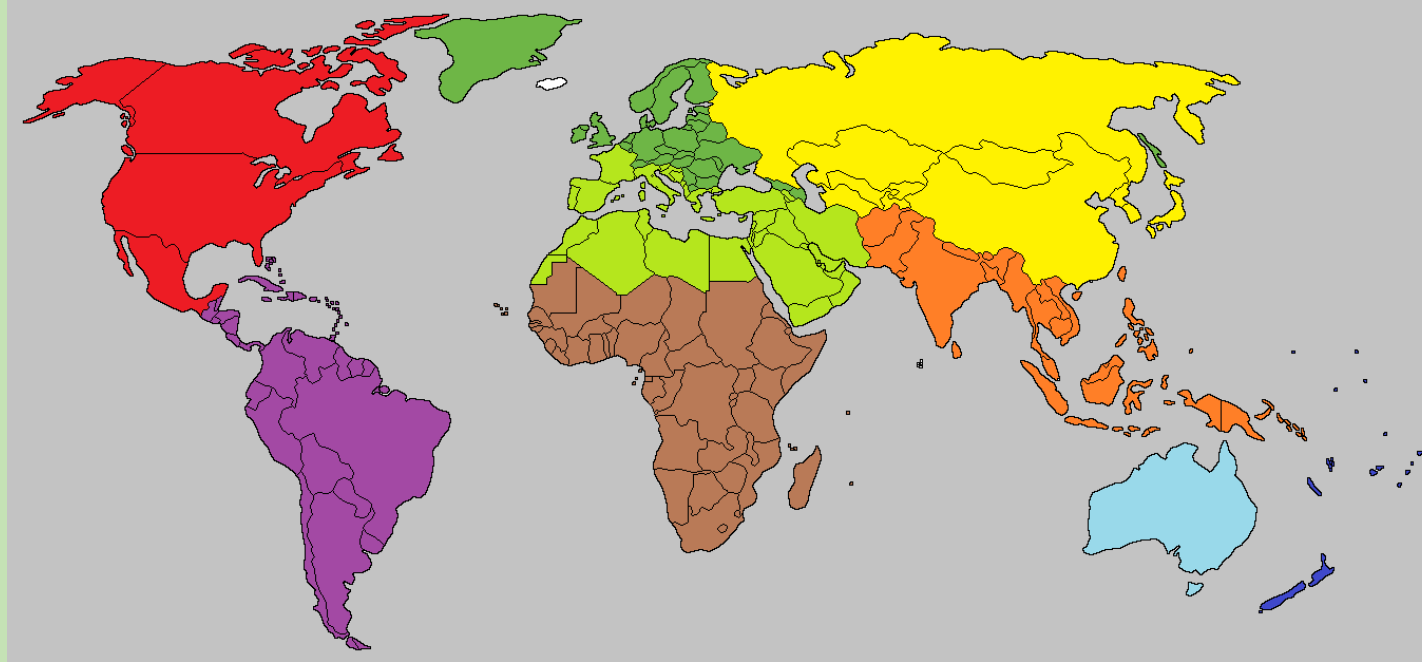
Towards global phytosanitary research coordination



Goal: to set the foundations for global phytosanitary research coordination

- To strengthen national coordination
- To engage with a broader audience
- To adapt activities to fit the needs of a broader audience

EUPHRESKO III regions



ACTIVITIES

Consultations of the regional champions by the Network Office and WP leaders

Consultations of national representatives by the regional champions

Consultations of national stakeholders by all project partners

Global

Regional

National

OUTPUTS

- Network for global PH research coordination
- Strategic Research Agenda

- Strategic Research Agenda
- Research topics for transnational calls

- Research topics for transnational calls
- Research projects

Workshop agenda

09:00-09:10	Welcome (Baldissera Giovani, Euphresco)
09:10-09:30	EUPHRESKO III overview (Baldissera Giovani, Euphresco) Surveys and consultations (Ria Nouwen, FPS)
09:30-10:00	Analysis of responses from Northern Europe (Les Kneebone, Cebra)
10:00-10:15	Break and walk to the virtual meeting room
10:15-12:00	Working Group discussions by country's representatives How to work together on common priorities Working Group 1, facilitated by Lena Vlaminck, FPS Working Group 2, facilitated by Anna Maria D'Onghia, CIHEAM-Bari Working Group 3, facilitated by Jasmine Burr-Hersey, Defra
12:00-13:00	Working Groups reports and discussions (by the facilitators)
13:00-13:15	Moving forward (Ria Nouwen, FPS)
13:15	End of the meeting



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EUPHRESKO III

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research coordination and funding

www.phrescoglobal.net 

Surveys and consultations

Consultation Northern Europe 25/10/2024

Ria Nouwen – FPS Health, Food Chain Safety and Environment,
Belgium



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Let's speak the same language

- **CONSULTATIONS:** The act of **exchanging information and opinions** about something in order to reach a better understanding of it or to make a decision.
- **PLANT HEALTH STAKEHOLDER:** Any organization or group of people having **responsibilities and / or interest** towards plant health. Examples are policy makers, research funders, research organizations, industry, farmers and foresters.
- **NEED:** something that you **consider necessary** to accomplish a specific goal or specific purpose.
- **PRIORITY:** the fact or the condition of **being regarded or treated as more important** than others. Different interests can drive priority: economy, trade, strategy, policy, science...

Let's speak the same language

- **PEST:** any species, strain or biotype of plant, animal or pathogenic agent **injurious to plants or plant products.**
- **CROP:** a **plant** [including trees] or **plant product** [including tree products, e.g. palette] that can be grown and harvested extensively for profit or subsistence.

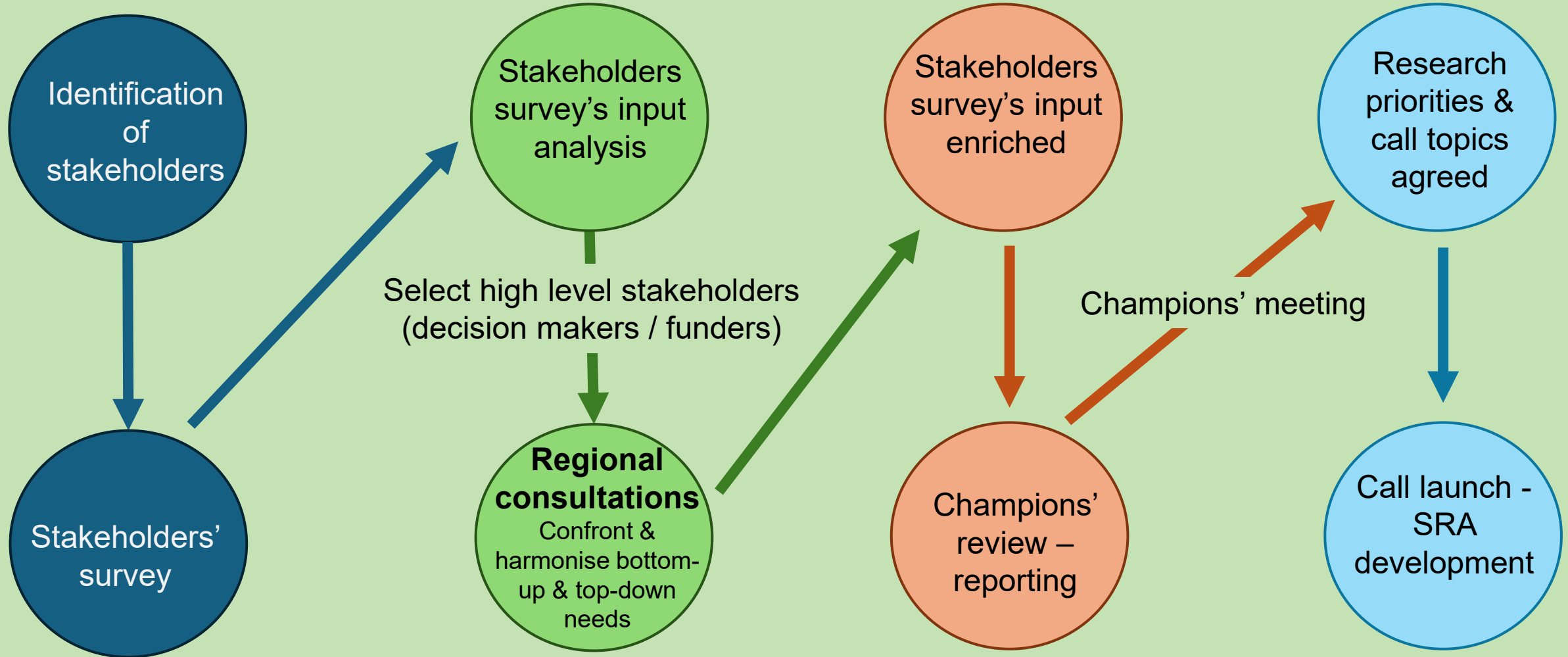
Why consultations?

- To collect information on **needs & priorities**:
 - to decide on call topics
 - to shape the next Strategic Research Agendabased on an alignment of **bottom-up and top-down** input.
- To explore the needs and possibilities for future collaboration
- To build trust
- To build the future Network

National / disciplinary

Regional / discipline

Global



Select high level stakeholders
(decision makers / funders)

Champions' meeting

INFORM

ANALYSE & DISCUSS

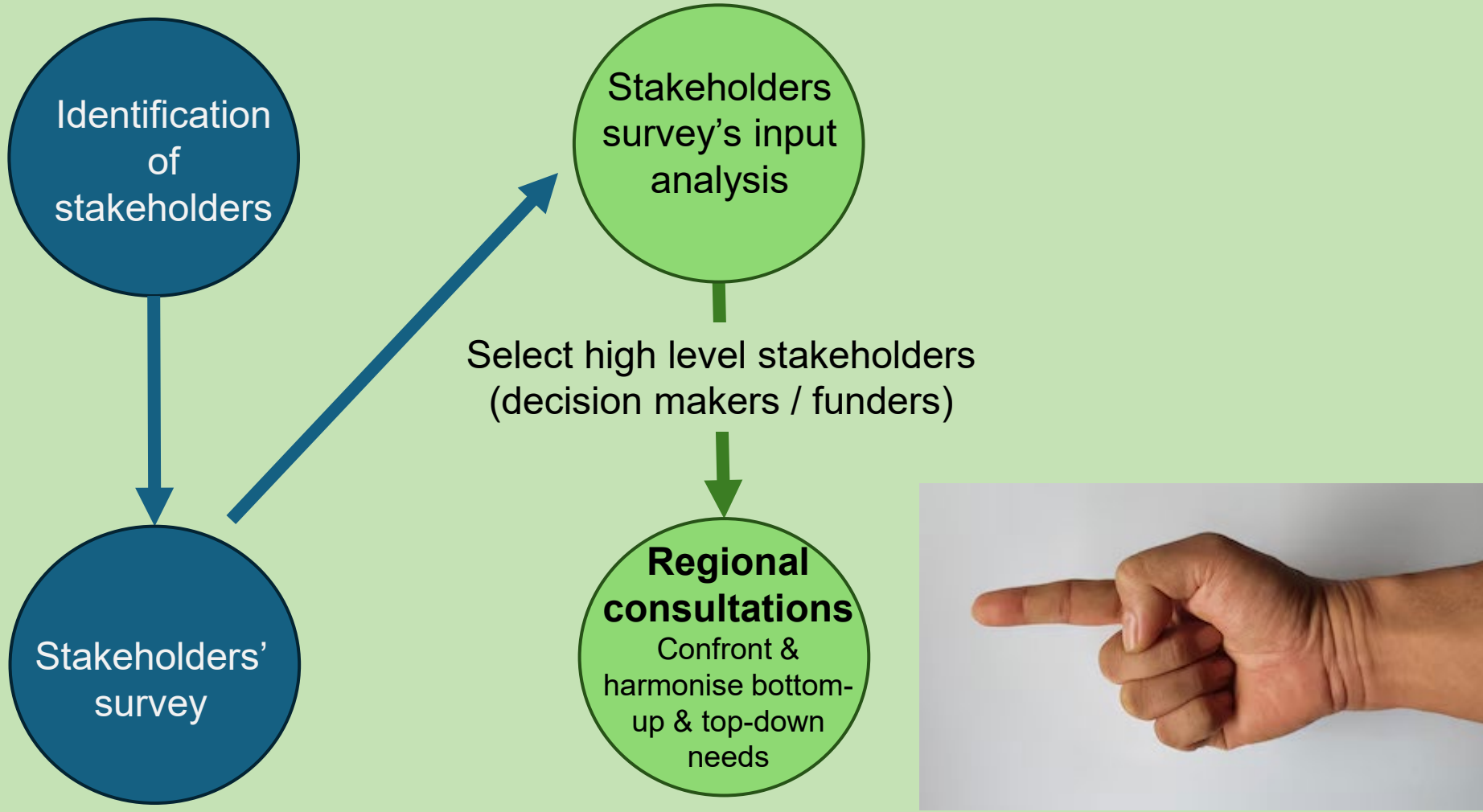
ANALYSE & FORMALIZE

AGREE & IMPLEMENT

National / disciplinary

Regional / discipline

Global



INFORM

ANALYSE & DISCUSS

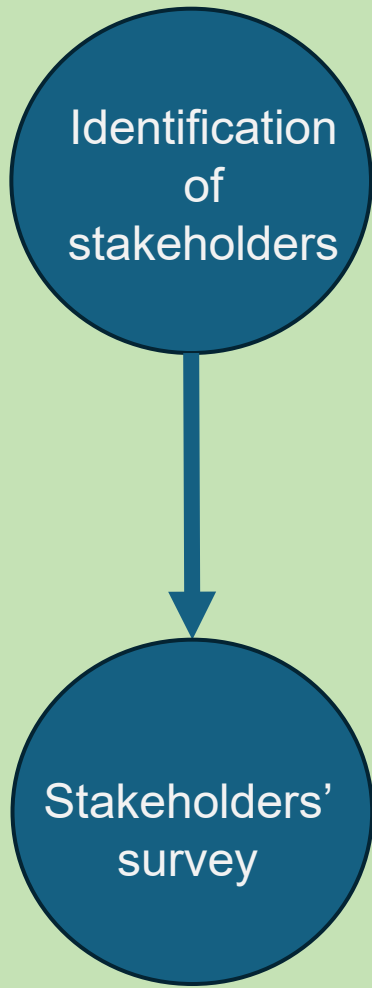
ANALYSE & FORMALIZE

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INFORM

ANALYSE & DISCUSS

ANALYSE & FORMALIZE

AGREE & IMPLEMENT


The survey - audience

Role	Category	What for?
Initiator	Policy makers	They provide the policy needs around which research activities are developed
	Research funders Industry	They define the national programmes and provide the resources for the research activities to be undertaken
Research implementer	Research organisations	They provide the expertise that allow research activities to be implemented, from the lab to the field
	Industry	
	Farmers and foresters	
	Others	
End-users of research	Farmers and foresters	They use the outputs of the research activities
	Industry	
	Policy makers	
	Research funders	
	Others	



The survey - questions

- Key **plant health issues** or related practical problems
- **Priorities** you would like to work on / that you think are important for your country, region or worldwide
- Agricultural **crops**
- Needs in terms of **capacity**
- **Priority pests** for your region
- **Research areas** to be addressed
- *Option: 1 **concrete research need** to be addressed in the next 3 years*

Northern Europe
105 answers 

The survey - analysis



Euphresco III survey analysis

Analyse EUPHRESKO III survey data project

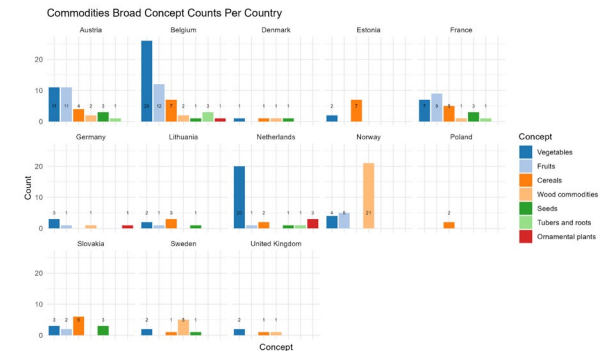
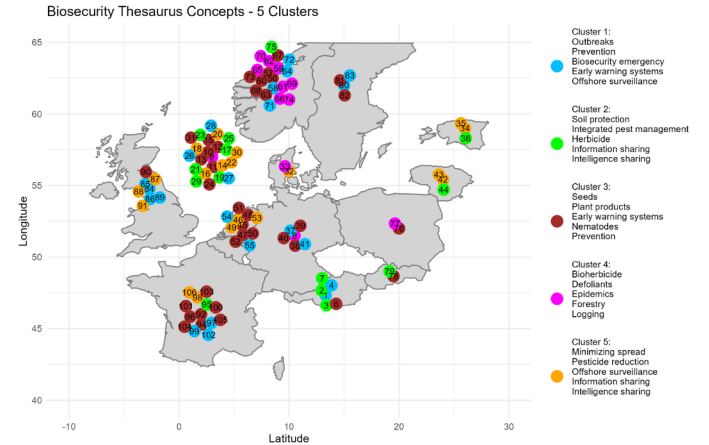
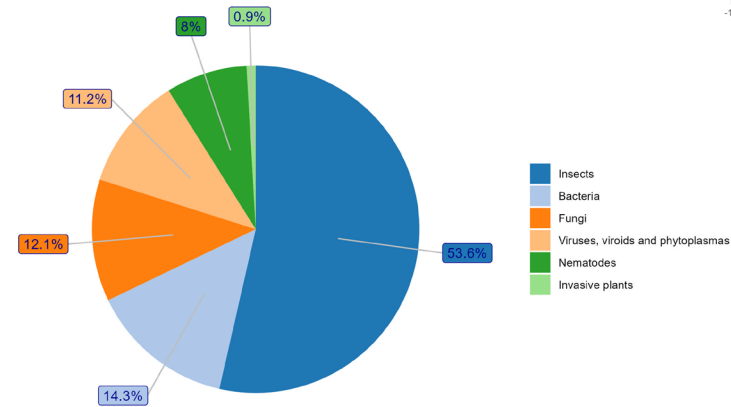
Les Kneebone
Centre of Excellence for Risk Analysis
University of Melbourne, Australia
25 September 2024



Outline

- Methods overview
- Results
 - Northern Europe
 - Per country
 - Cluster analysis
- Issues arising

Percentage of Pests Broad Concepts Across All Countries



Methods overview

Create ontology
from questions
(Web Protégé)

Transform to
machine-readable
format (RDF)

Load into graph
database
(GraphDB)

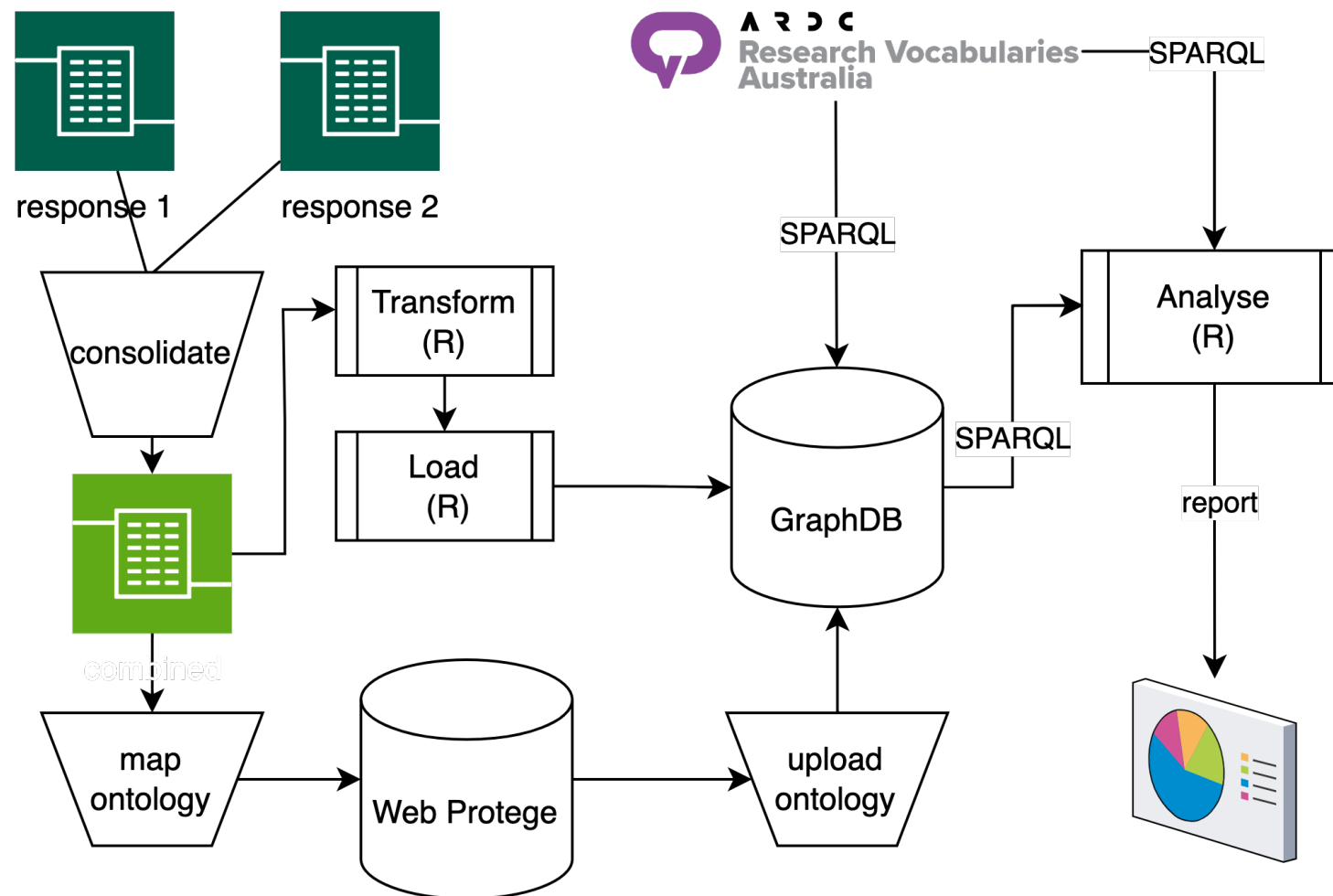
Classify with
biosecurity
vocabularies

Query the
database
(SPARQL)

Output tables,
charts, maps etc

R scripts and
SPARQL queries
will be shared

System architecture



Biosecurity Thesaurus

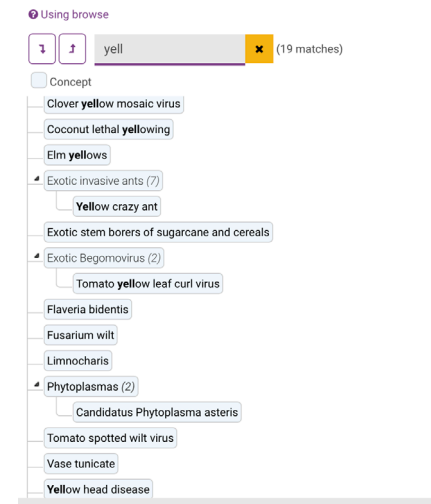
- 500+ concepts in a hierarchy
- ~500 alternative labels (synonyms)
- Drawn from literature, frameworks and user questions
- *Simple Knowledge Organization System (SKOS)*
- 100+ Indonesian labels
- CC license at *Research Vocabularies Australia*
- Updated with feedback from Euphresco



A screenshot of the Biosecurity Thesaurus web interface. The interface shows a version selector with 'April 2024' marked as 'current'. Below this are options to 'Download', 'Access Linked Data API', and 'Show SPARQL Endpoint'. A list of previous versions is shown, all marked as 'superseded': November 2023, August 2023, June 2023, May 2023, and April 2023. On the right side, there is a description of the SKOS vocabulary, a 'Languages' section for English, and a 'Notes' section stating it's a maintenance release with new concepts including Aquatic animal diseases, Bow-tie diagrams, Compartmentalisation, Fault tree analysis, Inert material, Native pests, Sleeper weeds, Specificity analysis, Spillback infection, Spillover infection, Swarming, Unaccompanied personal effects, Unmanned underwater vehicles, Weed seeds, and Zoning. A 'Licence' section at the bottom right shows the CC BY-NC-SA logo. At the very bottom, there is a 'Using browse' button.

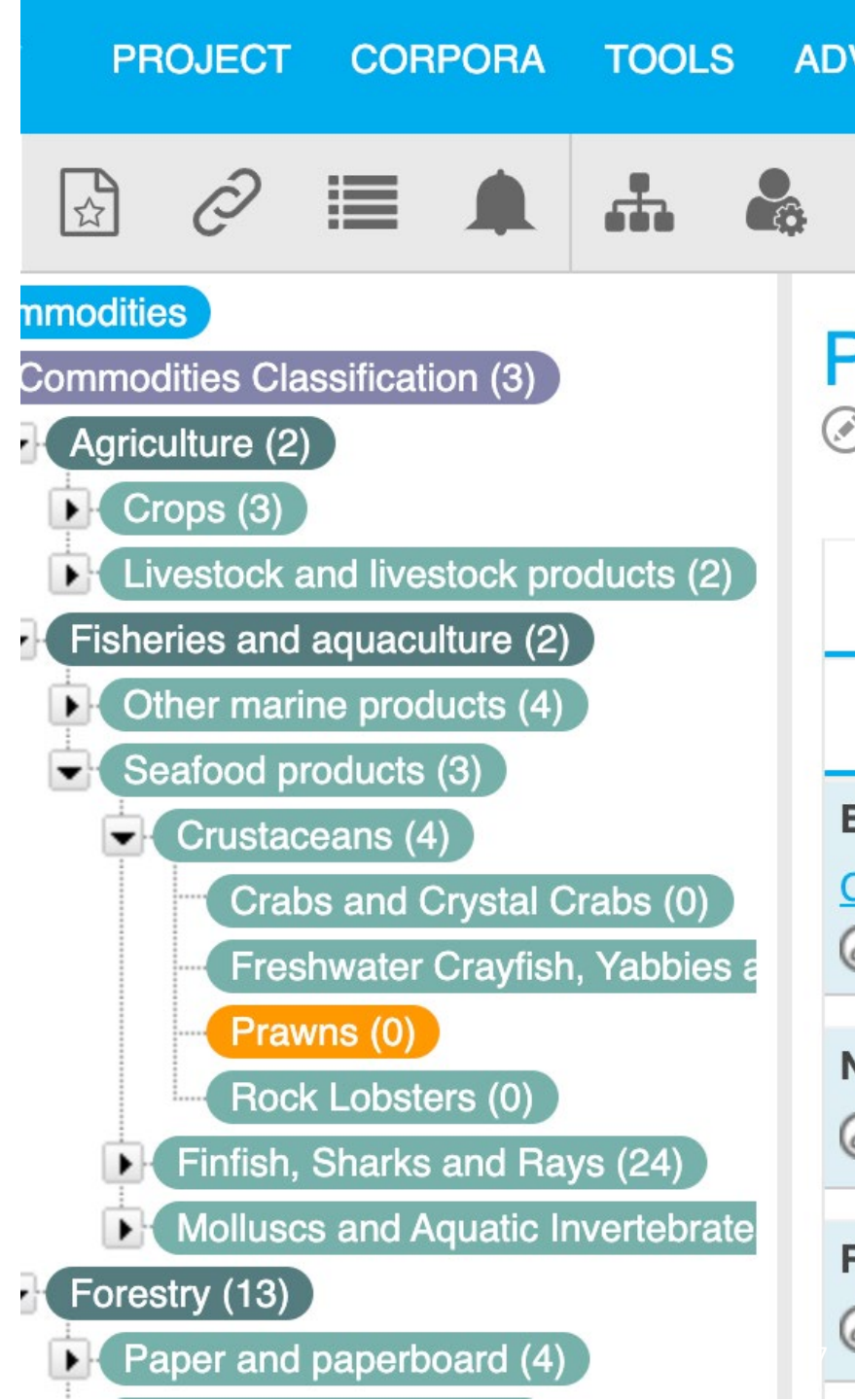
Priority Pests

- Priority Pests
- Compiling multiple lists
- Scientific and common names
- Linked to EPPO codes
- Linked to Biosecurity Thesaurus broad categories
- CC license at *Research Vocabularies Australia*



Commodities

- Commodities
- Adapted from ABARES classification
- Linked to EPPO codes
- Updated with feedback from Euphresco
- Linked to Priority Pests with “threatenedBy”



Vocabularies and classification

- **Biosecurity Thesaurus**

Classify:

‘plant health issues’

‘top 5 priorities’

‘capacity building’

‘research areas’

- Label and synonym matching, e.g.
“new pests” = “**emerging pests**”

Early warning systems, Offshore surveillance, Skill and knowledge transfer, Phytosanitary research collaboration, Biosecurity funding, Evaluation, Pest management, Detection, Regulated pests, Climate, Emerging pests, Outbreaks, Plant diseases, Biodiversity, Ecosystems

(Austrian Agency for Health and Food Safety (AGES))

Vocabularies and classification

- **Priority Pests**

Classify all columns

- Label and synonym matching, e.g. “Phytophthora infestans” = “Potato late blight”
- EPPO codes where available
- Broad classification using a ‘top concept’ approach
- Top concepts counted

Parasitic nematodes, Potato late blight [PHYTIN]

Terrestrial invertebrates [1], Plant diseases [1]

(Gartnerhallen)

Vocabularies and classification

- **Commodities**

Classify all columns

Apples, Vegetables, Canola, Wheat

(CENTRE R&D VEGEPOLYS VALLEY)

- Mix of broad and narrower concepts
- Broad classification and count could be done, e.g.
 - Apples / Pomme fruit / **Fruit** / Crops / Agriculture
 - **Vegetables** / Crops / Agriculture
 - Canola / Oilseeds / **Seeds** / Crops / Agriculture
 - Wheat / **Cereals** / Crops / Agriculture

Pests threaten Commodities

Potato late blight <cebra:threatens> Potatoes

We used known relationships between pests and commodities to make inferences in the survey data

Phytophthora
infestans is a regional
priority

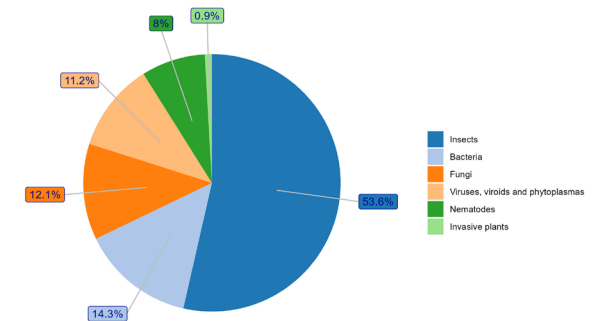
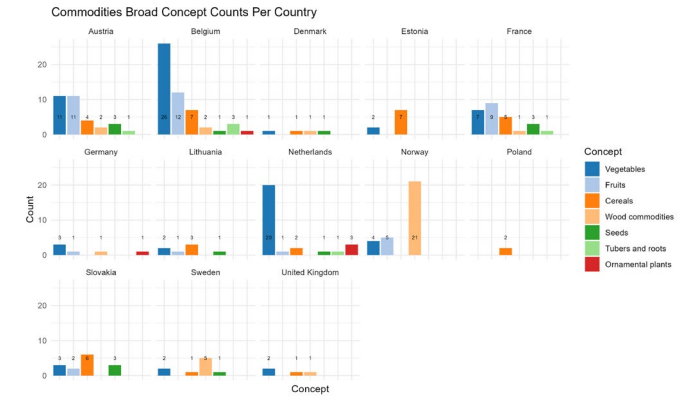
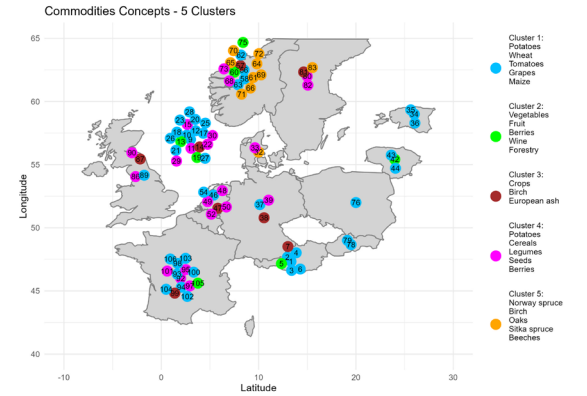
Gartnerhallen

Potatoe crops are
important
to study for
my organization

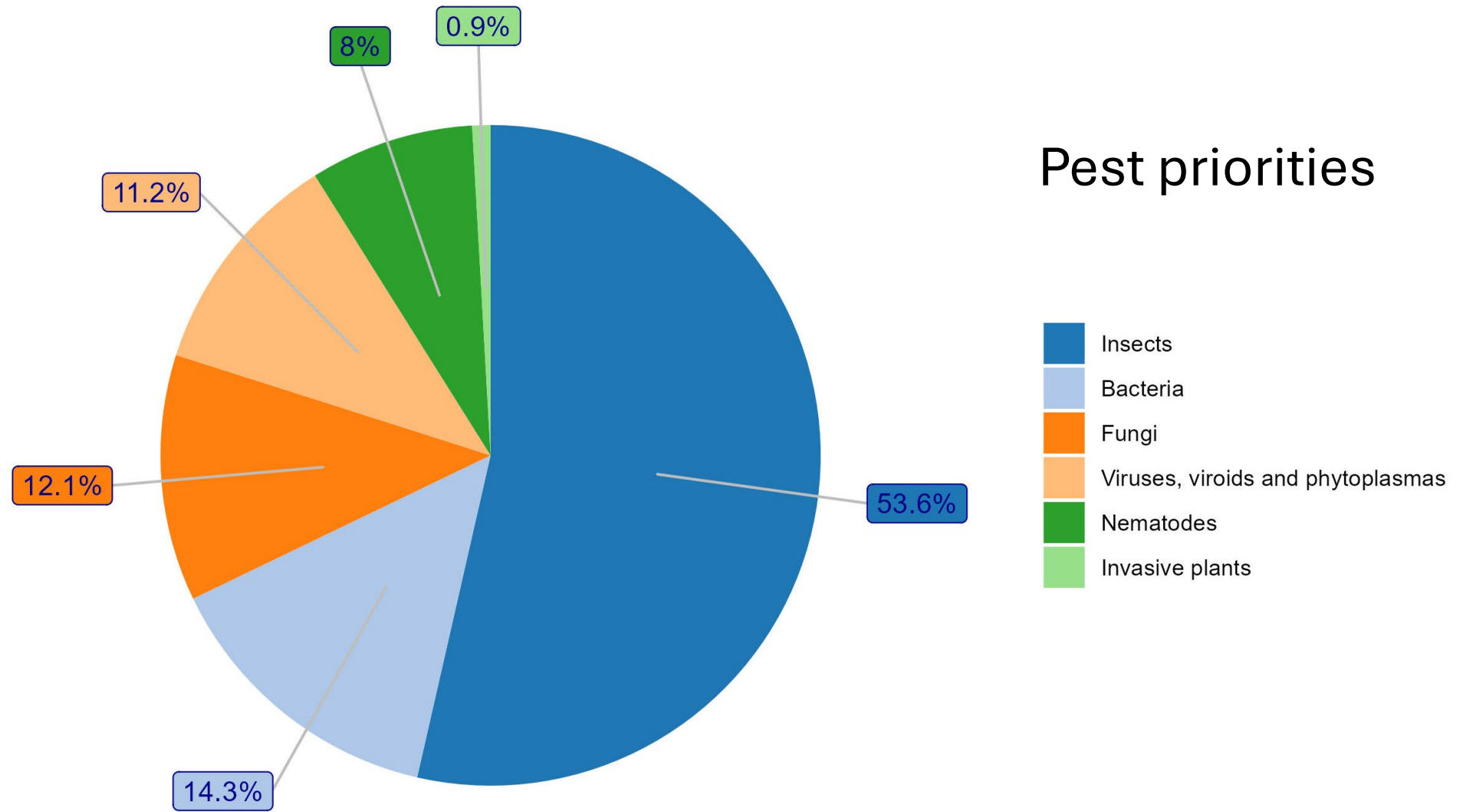
Nederlandse Akkerbouwwakbond

Results

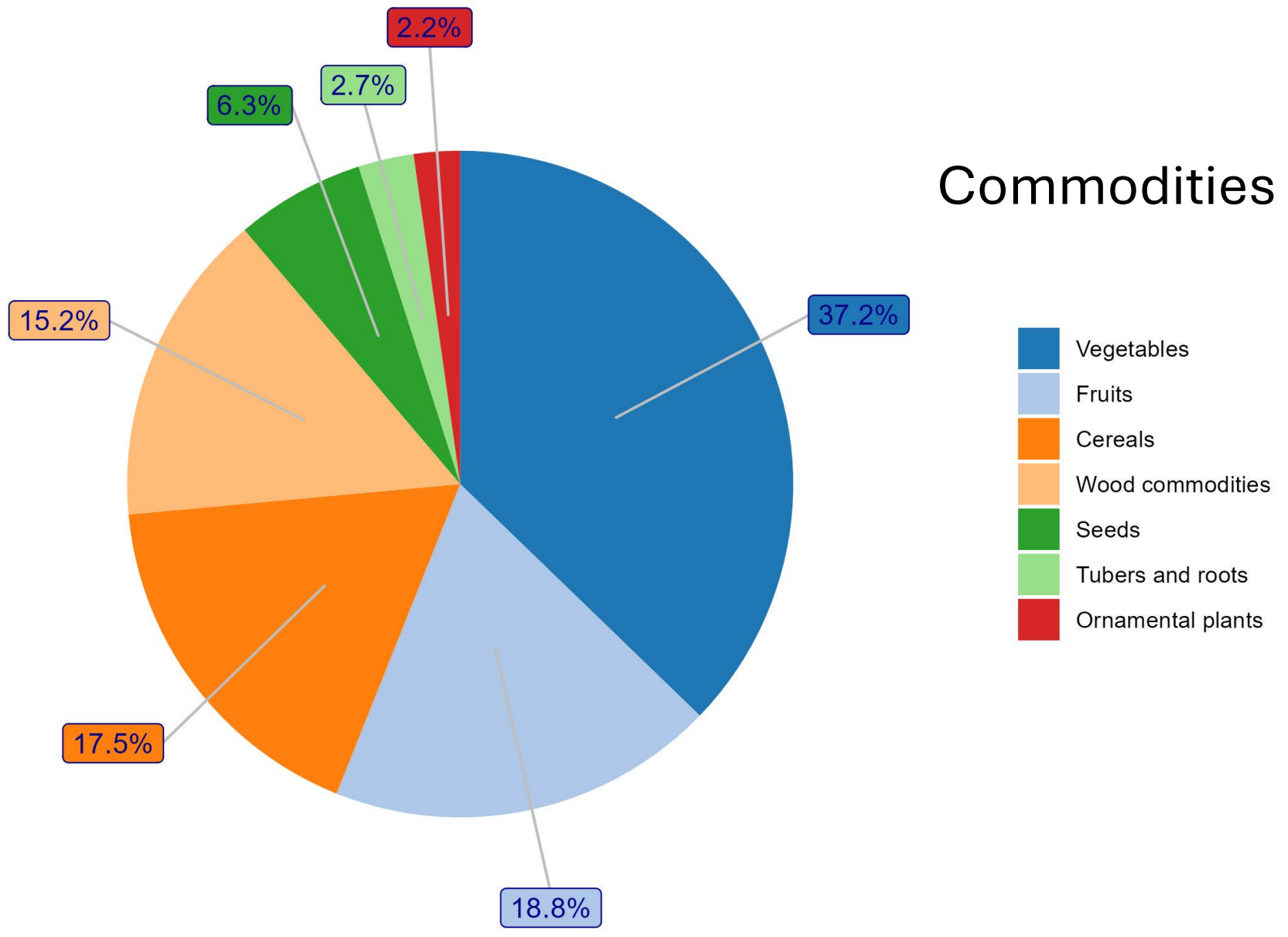
- All countries
- Per country
- Cluster analysis



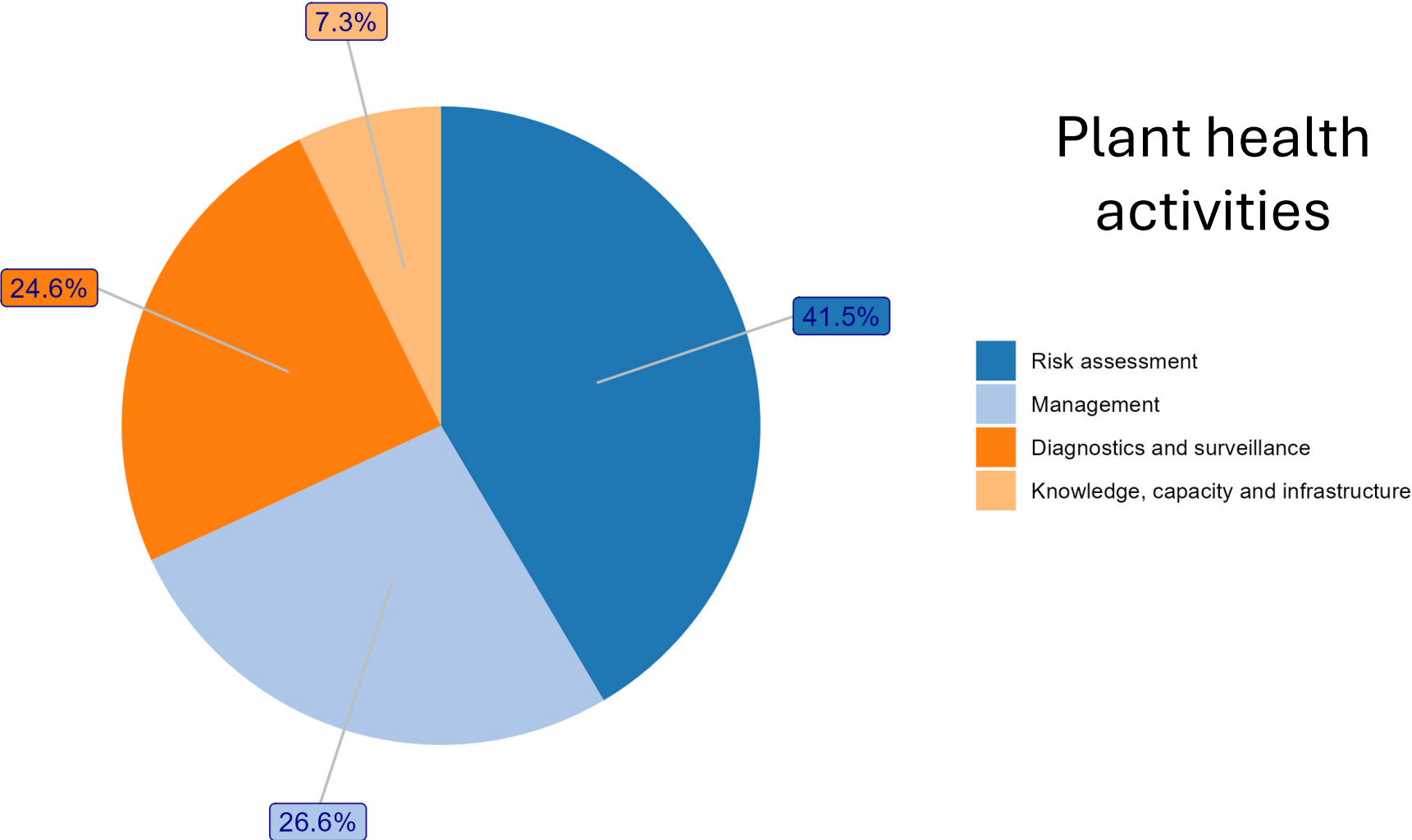
Pest priorities



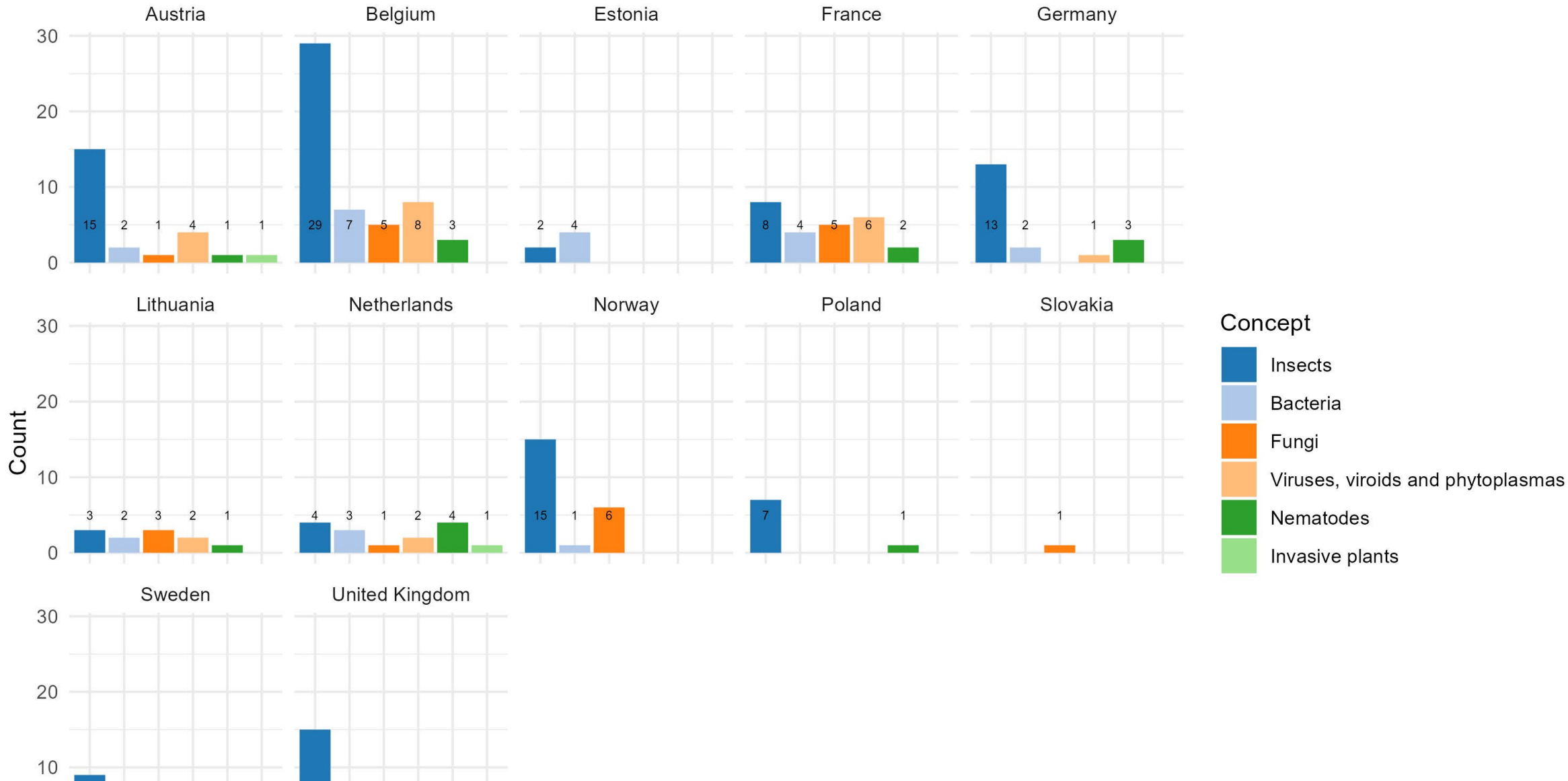
Commodities



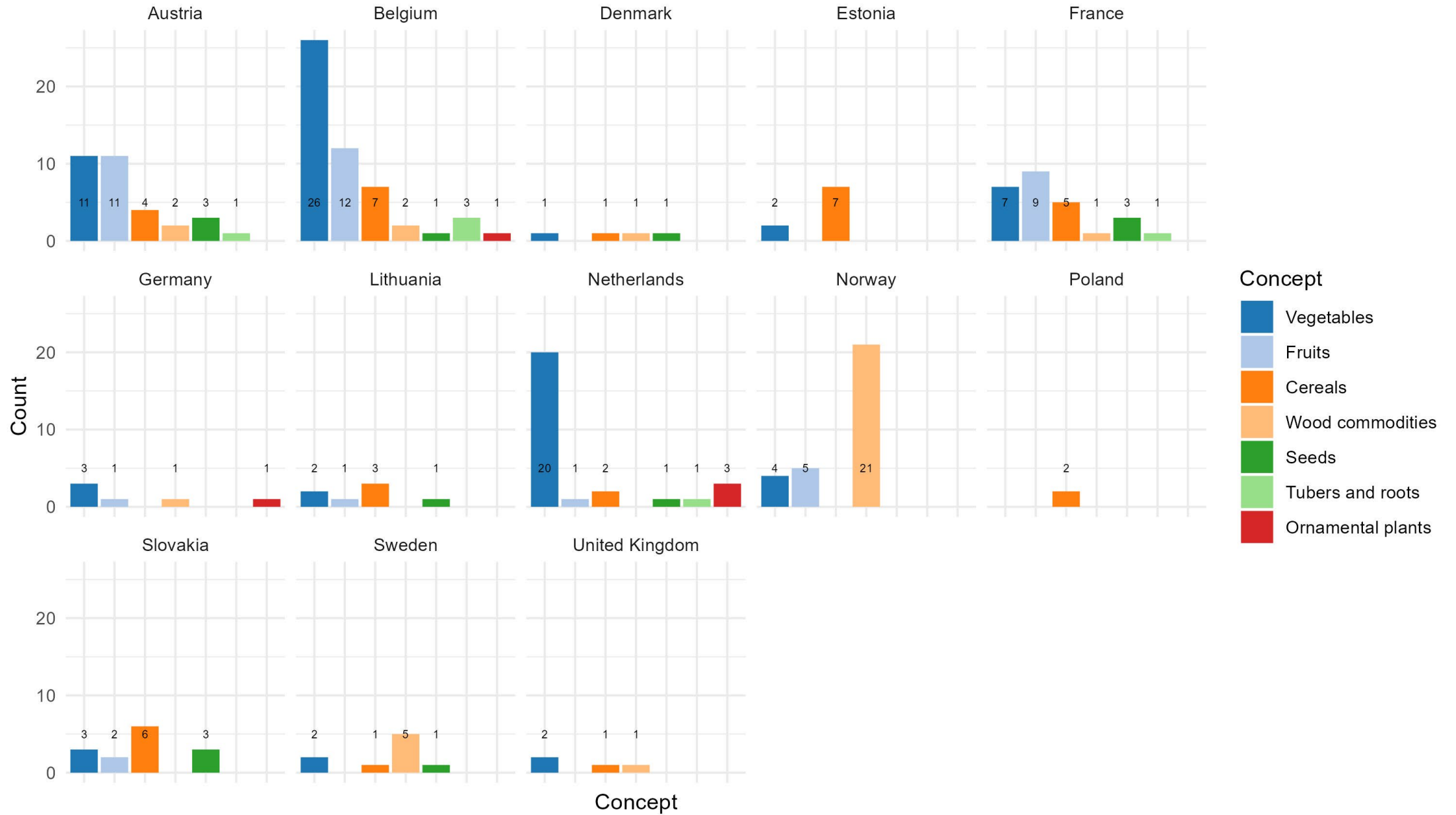
Percentage of Plant Health Activities Broad Concepts Across All Countries



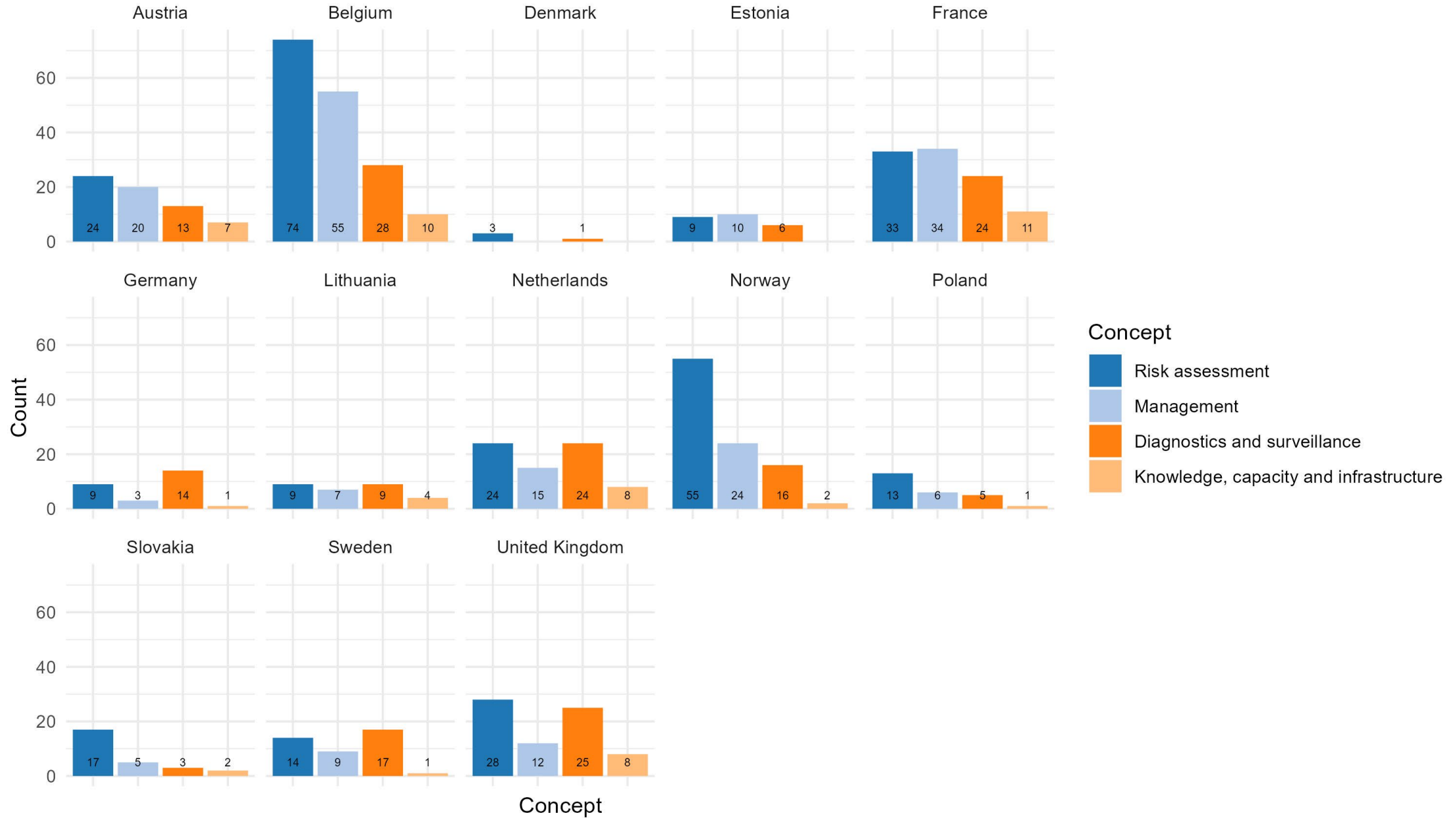
Pests Broad Concept Counts Per Country

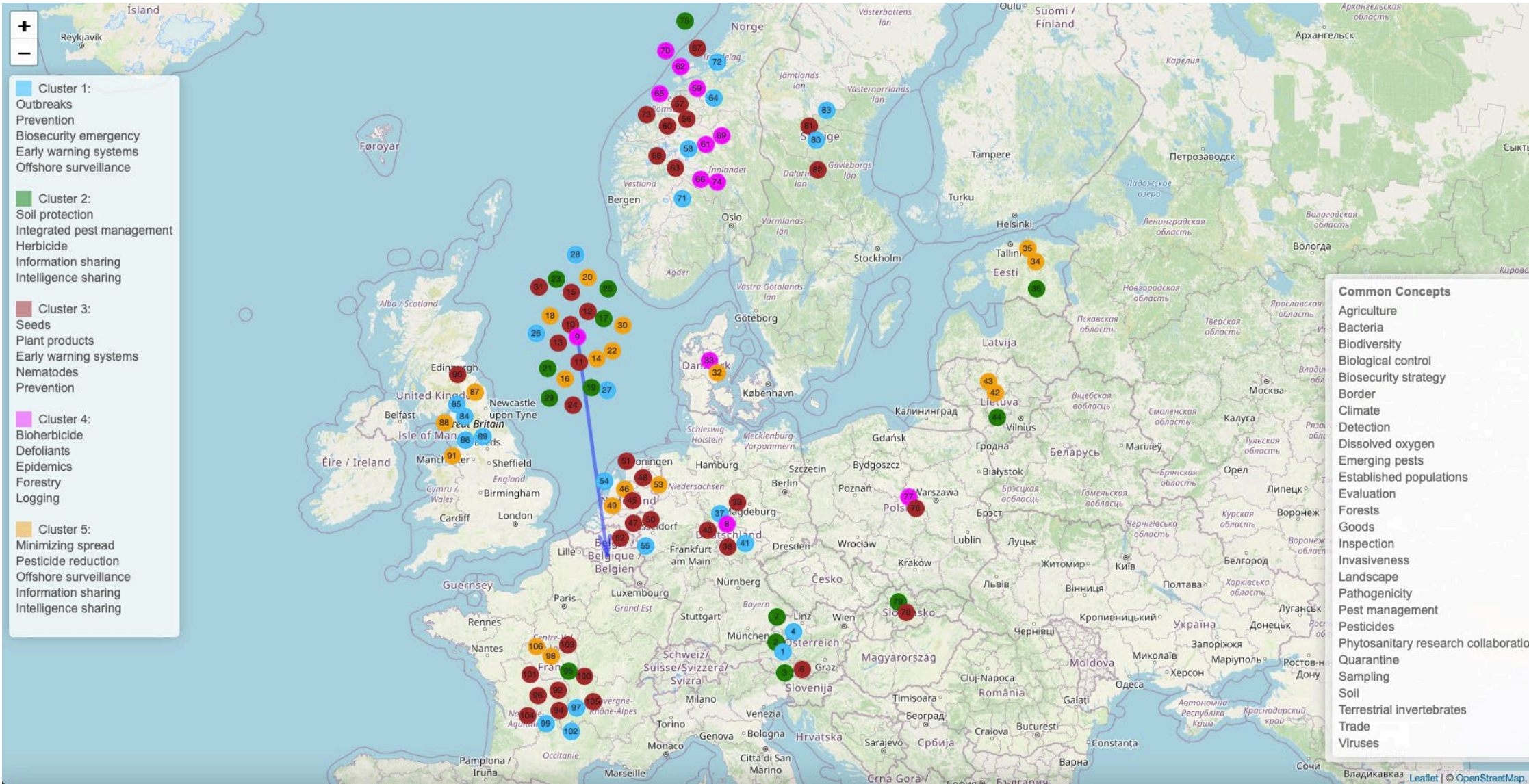


Commodities Broad Concept Counts Per Country



Plant Health Activities Broad Concept Counts Per Country





Cluster 3 for Biosecurity Thesaurus

Climate(12)
Detection(11)
Pathogenicity(11)
Seeds(11)
Pesticides(9)
Terrestrial invertebrates(9)
Agriculture(8)
Biological control(7)
Pest management(7)
Dissolved oxygen(6)
Plant products(6)
Viruses(6)
.....

85 concepts in total

Climate(12)
Detection(11)
Pathogenicity(11)
Pesticides(9)
Terrestrial invertebrates(9)
Agriculture(8)
Biological control(7)
Pest management(7)
Dissolved oxygen(6)
Viruses(6)
Sampling(5)
Soil(5)
.....

28 common concepts

Cluster 3:
Seeds
Plant products
Early warning systems
Nematodes
Prevention

Concept

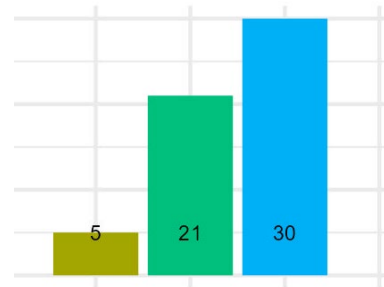
- Fruit
- Grains
- Oilseeds
- Tree species
- Vegetables

- Concept
- Biosecurity capability
 - Control measures
 - Ecosystems
 - Exotic invasive species
 - Pest risk
 - Risk analysis
 - Screening
 - Surveillance
 - Treatment

Issues arising

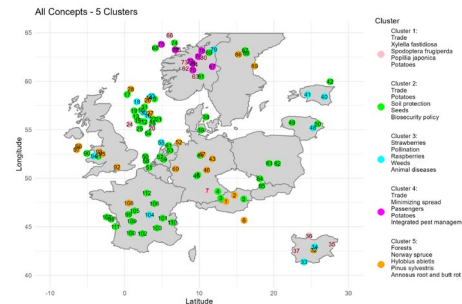
- Broad concept review
 - Changes to broad pest and commodity classes
 - Grouping Biosecurity Thesaurus top concepts into four main categories
- Survey collection method
 - Output relies on too much cleaning
 - Recommendations made for collection application support

Belgium



Concept

- Grassy weeds
- Pathogenic fungus
- Plant diseases
- Terrestrial invertebrates
- Weeds





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Moving forward

Consultation Northern Europe 25/10/2024

Ria Nouwen – FPS Health, Food Chain Safety and Environment,
Belgium



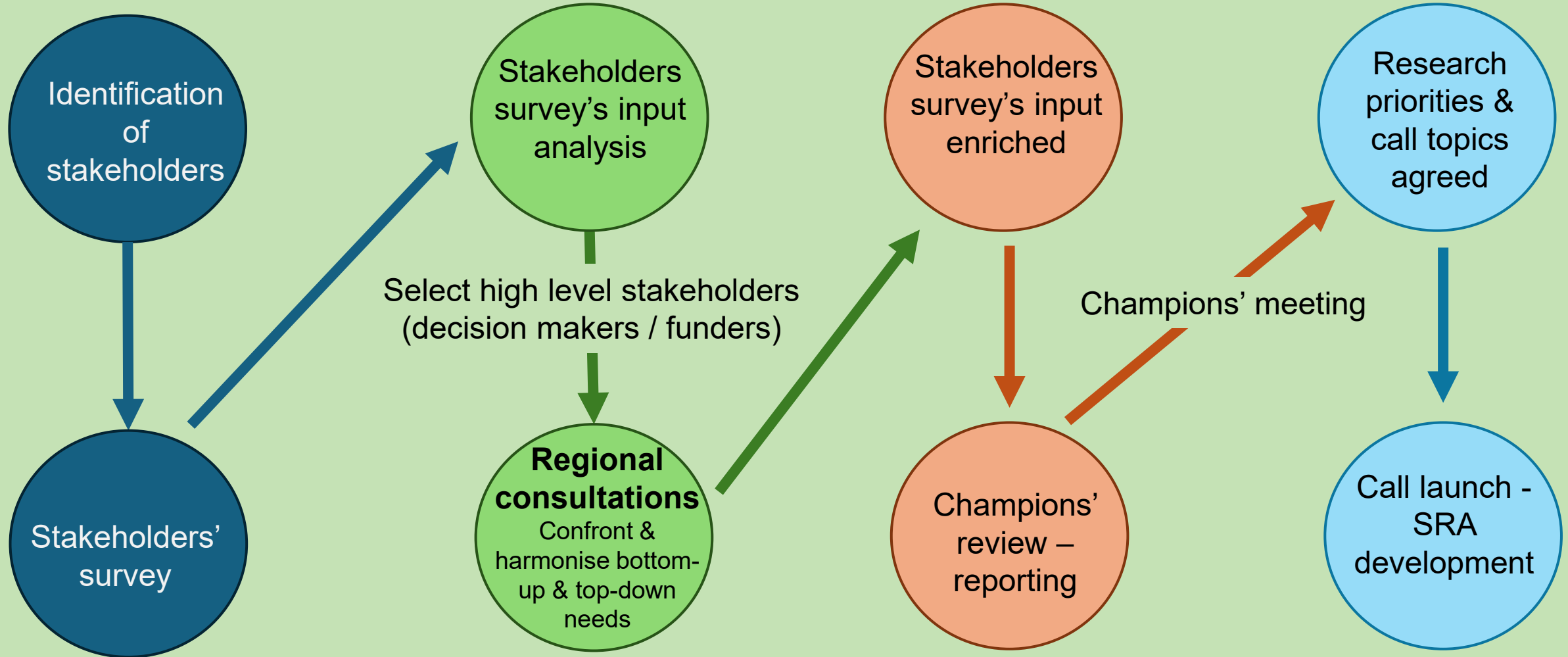
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National / disciplinary

Regional / discipline

Global



Select high level stakeholders (decision makers / funders)

Champions' meeting

INFORM

ANALYSE & DISCUSS

ANALYSE & FORMALIZE

AGREE & IMPLEMENT

What's next

- **N-Europe regional champion**

- **Draw up the consultation report – share this with you & with the EIII consortium**
- **Meet with the other regional and discipline champions**
 - **Share experiences on methodologies and outcomes of the consultations**
 - **Prioritise research needs**
 - **Transform them into concrete research topics**
 - **Implement the topics in the 2025 / 2026 call for collaboration**
 - **Analyse deeper to serve as input for the Strategic Research agenda (to be ready end of 2026)**



What's next

- **You**

- **Coordinate further on a national level**
- **Find resources**
- **Participate in the next calls**
- **Respond to the funding survey, that will be send out 2025**
- **Use the Strategic Research Agenda**
- **Stay connected**
- **Follow**
 - <https://www.phrescoglobal.net/>
 - [Youtube](#)
 - [X](#)

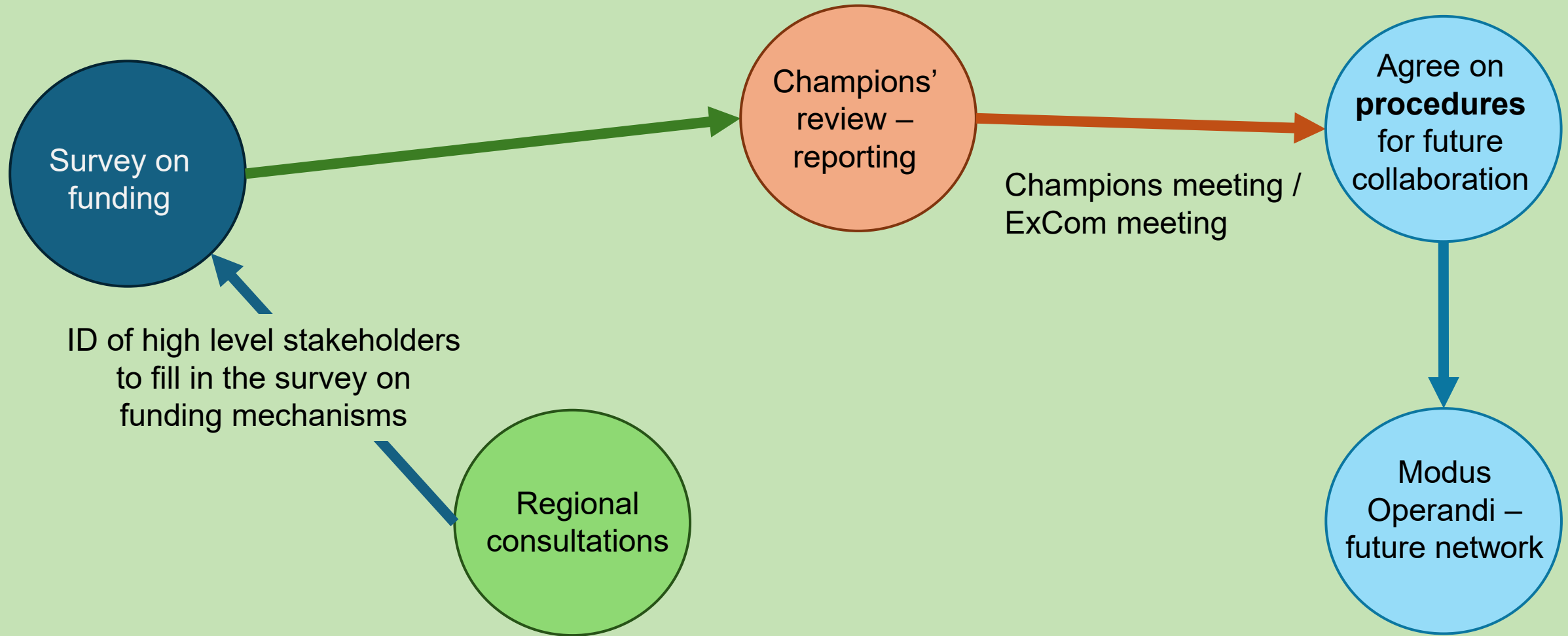


FUNDING SURVEY : EXPLORE THE FUNDING MECHANISMS

National / disciplinary

Regional / disciplinary

Global



INFORM

ANALYSE & DISCUSS

ANALYSE & FORMALIZE

AGREE & IMPLEMENT

Funding survey goals

- collect information on the **processes used by the organizations** that fund research
 - for the identification of research priorities/topics
 - for the prioritization of research activities
 - for the allocation of funds
- collect suggestions that will help the **shaping of processes** to increase synergies between the research funding processes of partners of the future network.
- Improve the abovementioned processes for EUPHRESKO III and the future network to identify, prioritize and implement research activities that are more **impactful for policymaking and innovation.**

