Use the Q&A button to ask questions

Participate in voting for preferred questions to respond to at the end of the presentations

(the most voted questions will be asked first !)

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IPM works

An EU-wide farm network demonstrating and promoting cost-effective IPM strategies

FINAL WEBINAR – 12 March 2025 – 14:00-17:00 CET

Do we still need IPM?

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IPMWORKS, a specific methodology to promote holistic IPM and reduce the reliance on synthetic pesticides

Nicolas Munier-Jolain | INRAE | Coordinator

Objectives of the IPMWORKS network of demo farms

Demonstrate - with 'pioneer' farmers - that

- **Reducing drastically pesticide use and impact is possible…**
- **…is cost-effective…**
- **… and does not impair food security in EU**

… provided that IPM is considered with a 'holistic' approach

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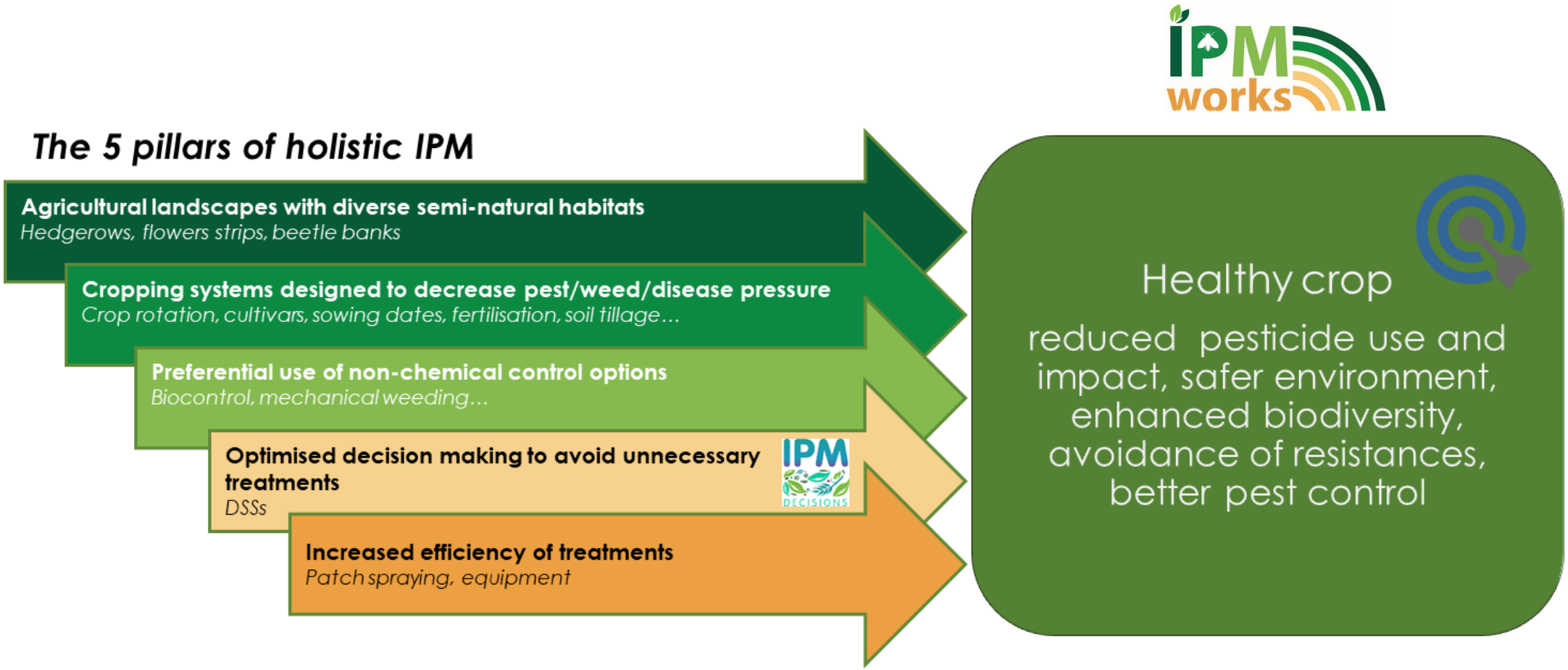
IPMWORKS supports a holistic approach to IPM



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The IPMWORKS network of demo farms

31 Partners

16 Countries

22 Hub coaches

246 Demo Farmers

≈ 2400 farms including national networks affiliated to IPMWORKS

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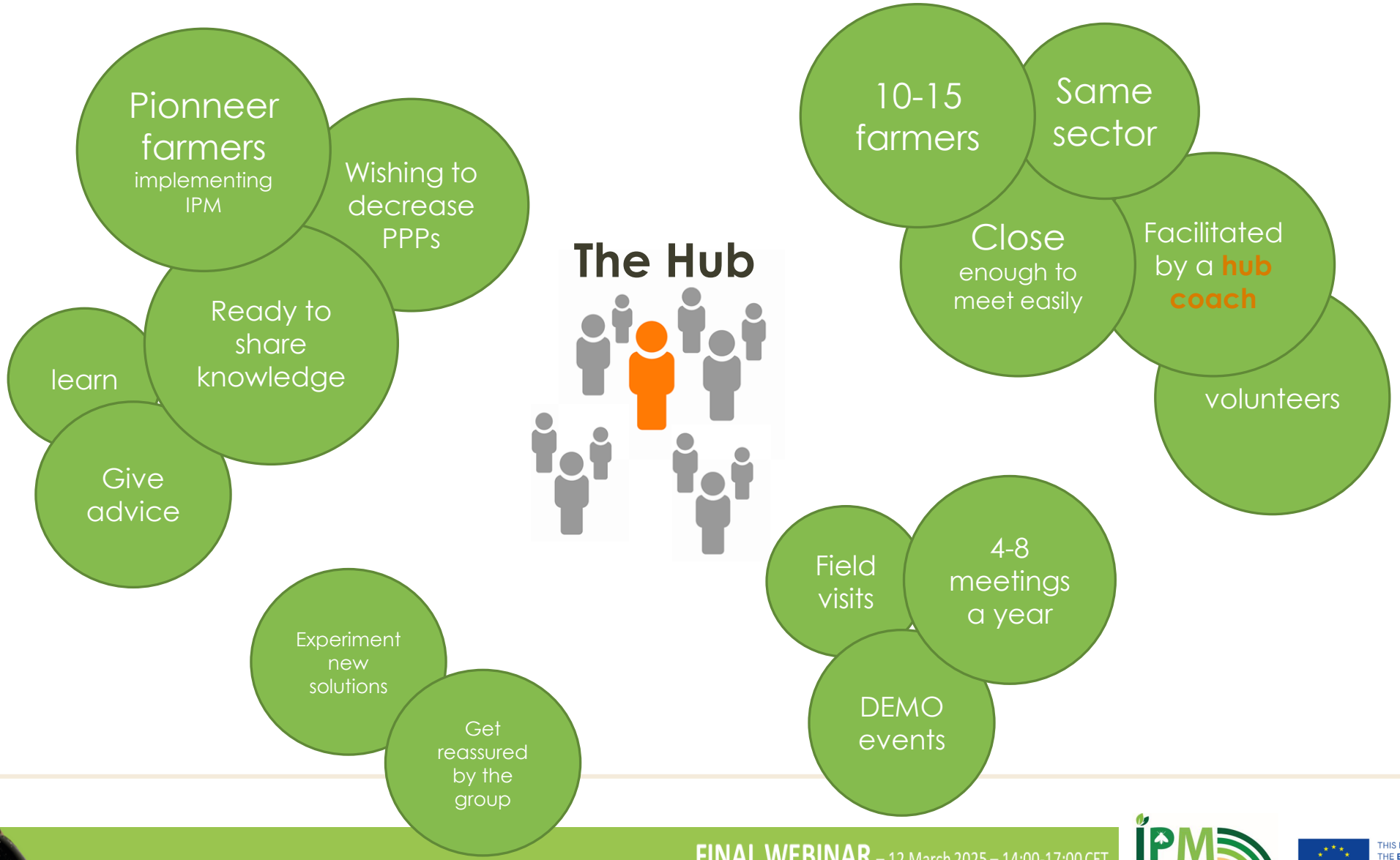
A specific methodology for fostering IPM adoption

based on peer-to-peer knowledge exchange… and facilitation



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A specific methodology for fostering IPM adoption

based on peer-to-peer knowledge exchange... and facilitation

The major role of Hub coaches

'IPMWORKS hubs are guided by a hub coach. Do you want to know how they work? Check it out in this video!'
Jolien Claerbout, Hub Coach at INAGRO, Belgium
https://www.youtube.com/watch?v=7zLqcKrjD7U

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A specific methodology for fostering IPM adoption

based on peer-to-peer knowledge exchange... and facilitation

Enthusiastic endorsement by the IPMWORKS community

- **Farmers**
  - ✓ Happy to have technical discussions with peers
  - ✓ Feel reassured from the group
- **Hub Coaches**
  - ✓ A new approach for advisers
  - ✓ More diverse activities
  - ✓ A progressive development of trust in the group

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A specific methodology for fostering IPM adoption

based on peer-to-peer knowledge exchange… and facilitation

The IPM***WORKS*** Hub Coach 'Capacity building', March 2022, Toulouse, France

The methodology required specific capacity building of advisers

>> a EU-wide network of advisers

- **Knowing each other**
- **Sharing some technical knowledge**
- **Sharing tips and methods for fostering knowledge exchange**

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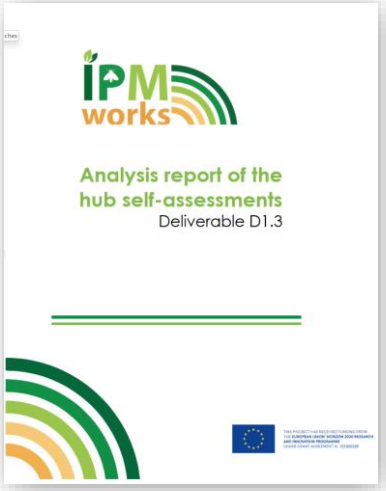
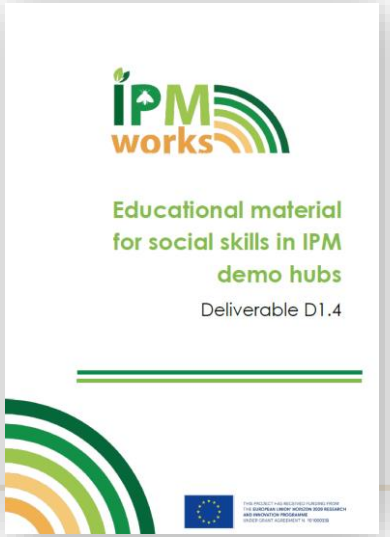
A specific methodology for fostering IPM adoption

based on peer-to-peer knowledge exchange… and facilitation

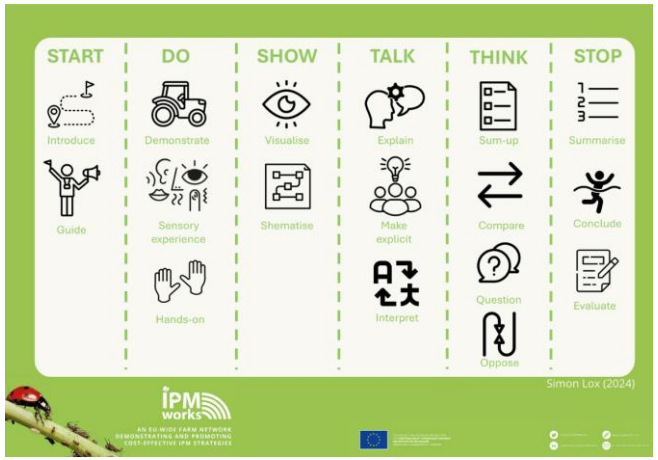




A major legacy of H2020 IPMWORKS

Excellent resources from the practical experience of 22 Hub Coaches

- How to recruit farmers in a hub
- How to build trust
- How group activities do encourage innovation
- How to combine technical knowledge on IPM and soft skills
- How to promote a holistic vision of IPM
- Tips for interactive learning on IPM
  e.g. benchmarking, field visits, co-design workshops, cross-visits…
- Tips for efficient demo events
- And a lot more…



Six steps for creating a good flow in a meeting/event.
Source: Simon Lox.

Documents available from the project web site https://ipmworks.net/category/public-deliverables/

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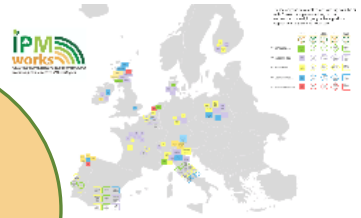
Main outcomes of the project

A community of Hub Coaches

Proof of concept

A shared method

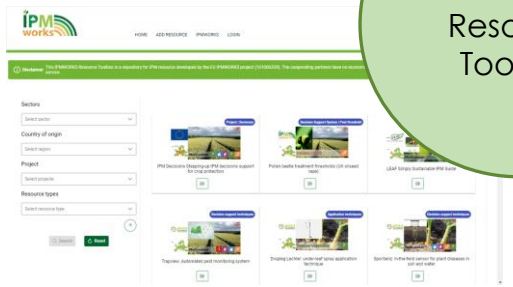
≈ 250 DEMO events



A mapping of IPM solutions

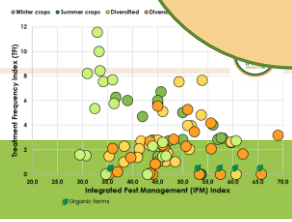
Communication channels

IPM Resource Toolbox



E-learning training modules

Surveys & Results



Policy recommendations

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THANK YOU!

Nicolas Munier-Jolain| INRAE | nicolas.munier-jolain@inrae.fr

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Progress made in IPM adoption in IPMWORKS farms & mapping IPM solution

Mette Sønderskov | Aarhus University, Denmark

IPM in action
Changes during the time of the project and cost-efficiency

The data was collected from the IPMWORKS network farms in all five sectors: arable, vineyards, outdoor vegetables, orchards and greenhouse production

3 surveys:

1. A **qualitative** survey, which established a baseline for IPM awareness, IPM adoption, rough estimate of pesticide use, and self-assessment at the beginning of the project

2. A **quantitative** survey with a large degree of details on the cropping system, management practices and economics. Provide the ability to calculate indicators for pesticide use and impact and cost-efficiency

3. Follow up on survey #1 to focus on changes during the project in crop management, especially pesticide use

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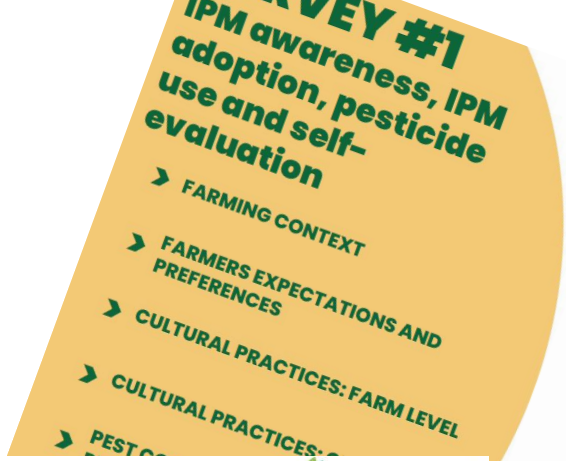
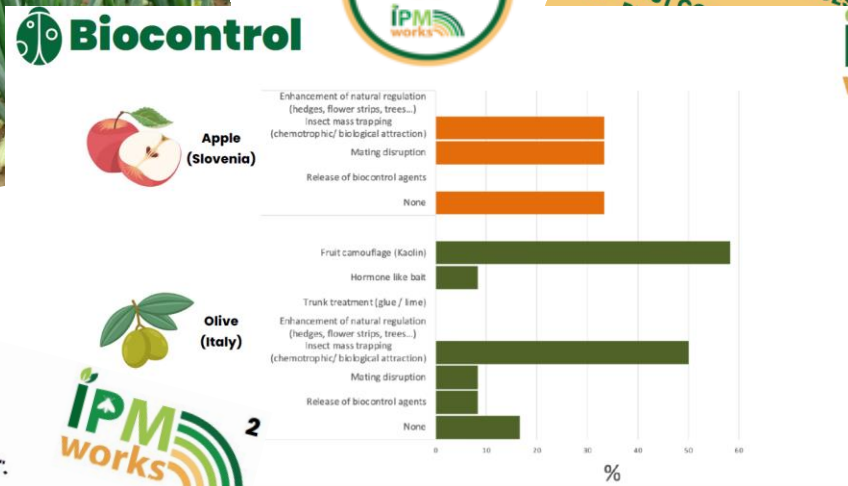
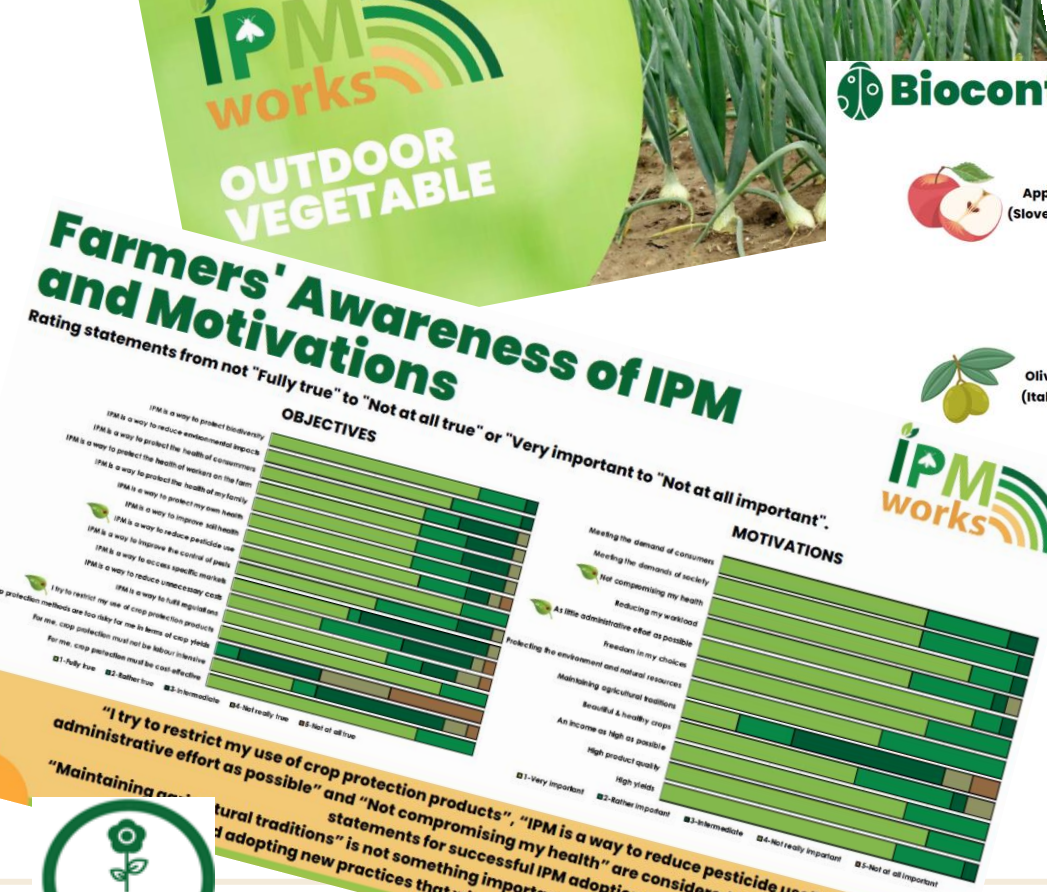
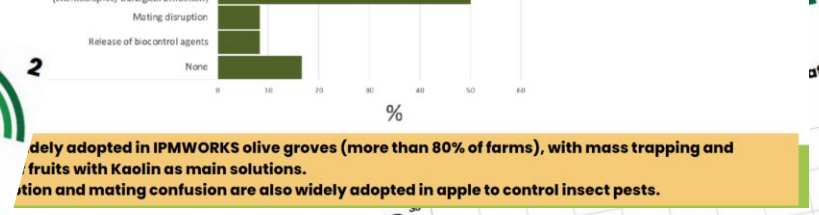
Survey #1/#3: Qualitative self-assessment

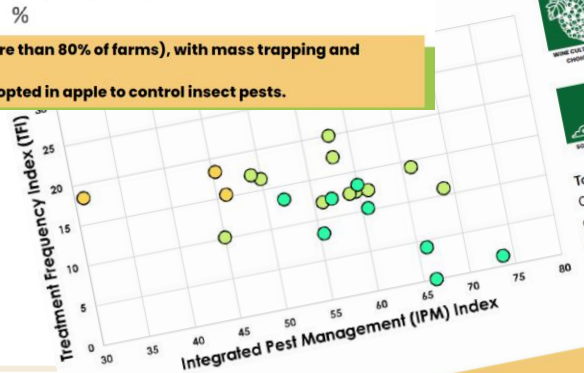
- Booklets describing the results on project website











FINAL WEB

12 March 2025 – 14:00-17:00 CET

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Highlights from Survey #1

Similarities among sectors

- High awareness among the participating farmers of IPM as a way to reduce plant protection products regardless of sector and a strong requirement for IPM to be cost-effective
- Farmers were generally driven by a motivation to achieve high yields of high quality, meet the demands of consumers/society and protect health and environment

Deviations among sectors

- The perceived risk of relying on alternative IPM strategies was considered slightly higher by outdoor vegetable and greenhouse farmers than by arable, orchard and vine producers
- The increased labour requirement for some IPM strategies were of slightly higher importance for arable and greenhouse sectors than for outdoor vegetable, orchard and vine producers

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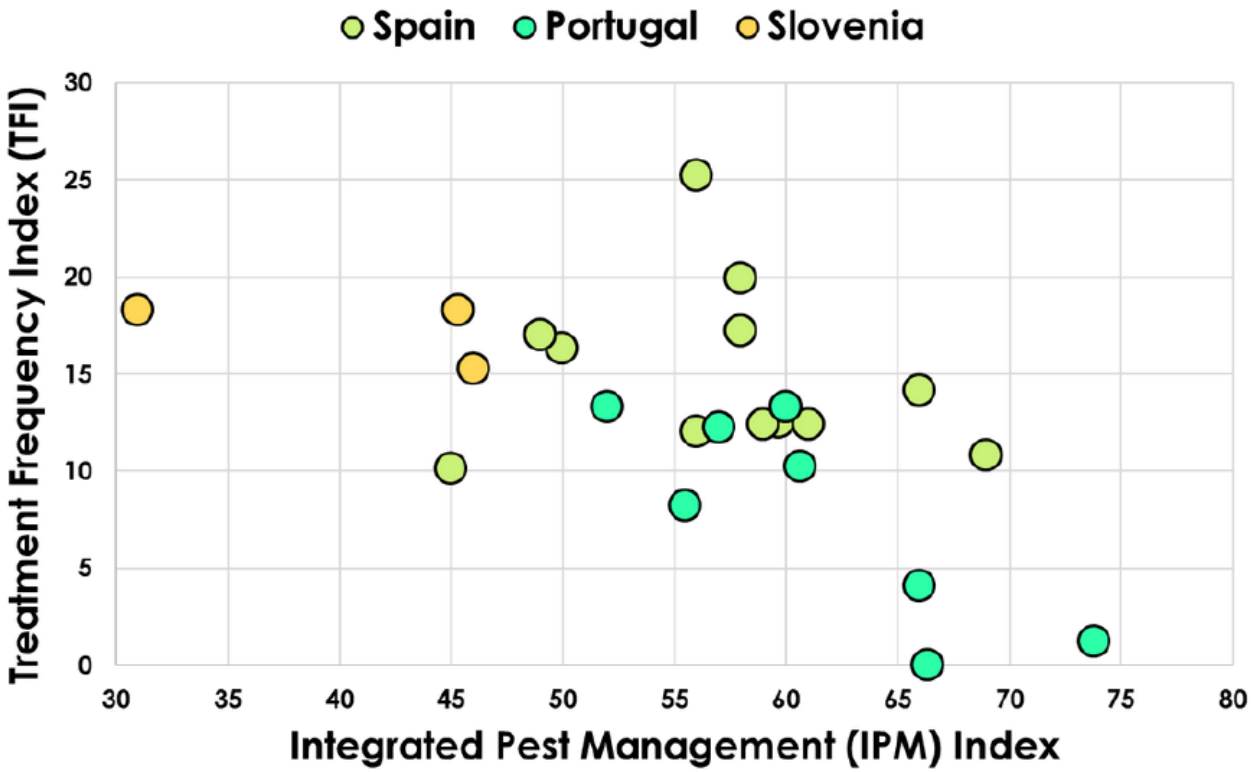
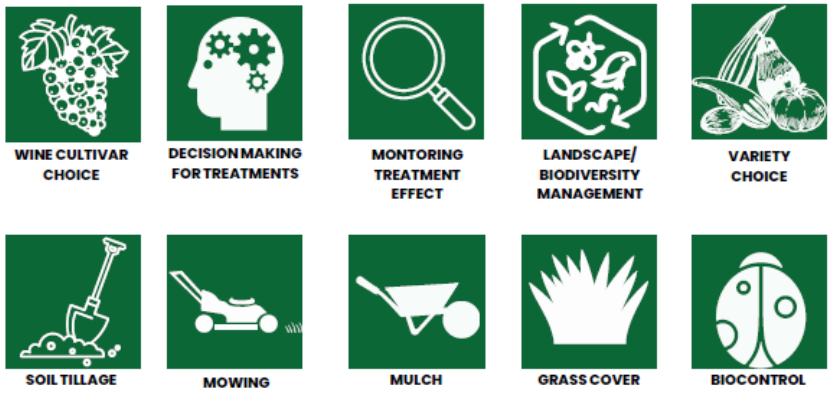
Highlights from Survey #1
Example from vineyards

NUMBER OF FARMS
27

PARTICIPANT COUNTRIES
SPAIN, PORTUGAL, SLOVENIA

We tested a new IPM Index calculated from the information collected on crop and pest management.





Topics included in IPM Index

Cultural practices at the crop and farm levels were evaluated based on the last 3 cropping seasons.

IPM practices included in the index were e.g. *use of Decision Support Systems, resistant cultivars, cover crops, mowing, mulching, use of biocontrol solutions, mechanical weeding, protection of wildlife at the landscape scale...*

Each practice rating was then scored between 0-4. The IPM index is the sum of the weighted scores and ranges [0 - 80].

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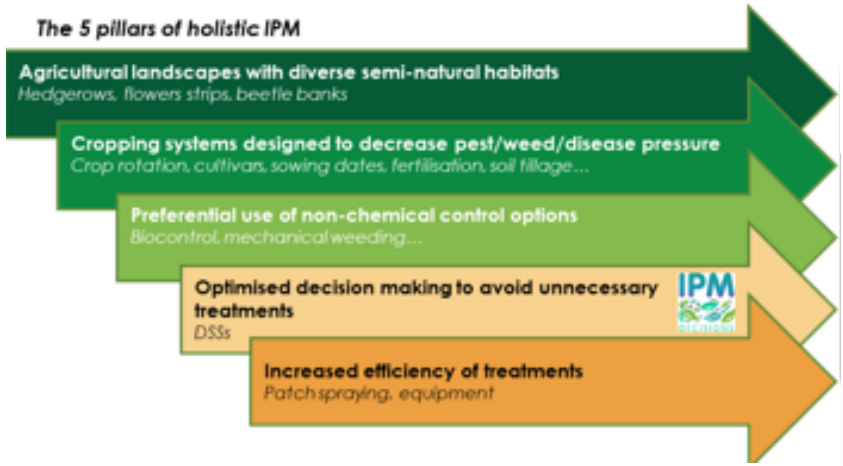
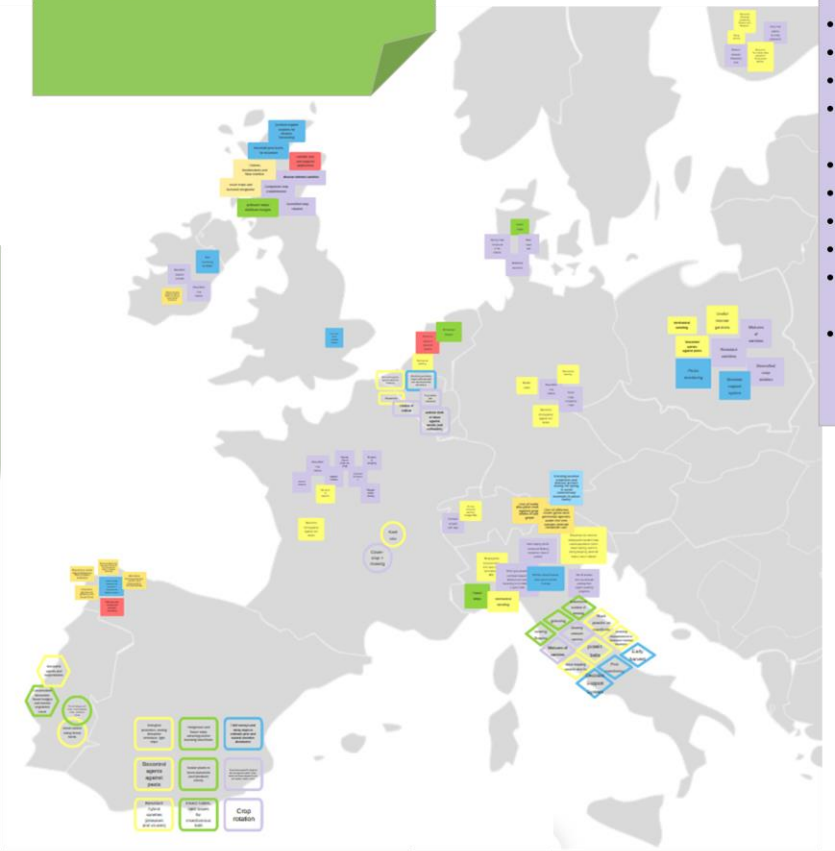
Mapping IPM solutions



Pillar 1 : Landscape

- Pollinator strips/ wildflower margins
- Hedgerows & flower strips
- Undersown flowers
- Banker plants
- Insect hotels
- Nest boxes for bats
- Grassing, reduced number of mowing (orchards)
- Grass margins around fields against grass weeds



Pillar 2 : Cropping systems

- Crop rotation
- Diversified sowing seasons
- Temporary grasslands
- Grass strips in between strawberries
- False seed bed
- Rotational ploughing
- Disease tolerant varieties
- Short cycle varieties (maize)
- Variety mixtures
- Companion crops
- Mulches – cloth, plastic or straws (protected crops)
- Intercropping
- Delayed wheat sowing
- Moderate fertilisation
- Cover crops and mowing (vines)
- Pruning management to increase natural ennemies (orchards)
- Seed cleaning

Pillar 3 : non-chemical control

- Mechanical weeding (several options)
- Biocontrol agents
- Biostimulants
- Biopesticides
- Kaoline and rock powder (vines & orchards)
- Cover grasses and perenial plants under olive trees
- Mating disruption
- Protein baits
- Mass trapping (& light traps)
- Sheep grazing against weeds (vines)

Pillar 4 : Decision making

- Models for desease forecast
- Pest monitoring (BYDV)
- Monitoring of beneficials
- Threshold-based treatments

Pillar 5 : Efficiency of treatments

- Adjusted doses
- Targeted application
- Precision spraying of perenial weeds (Arable crops)

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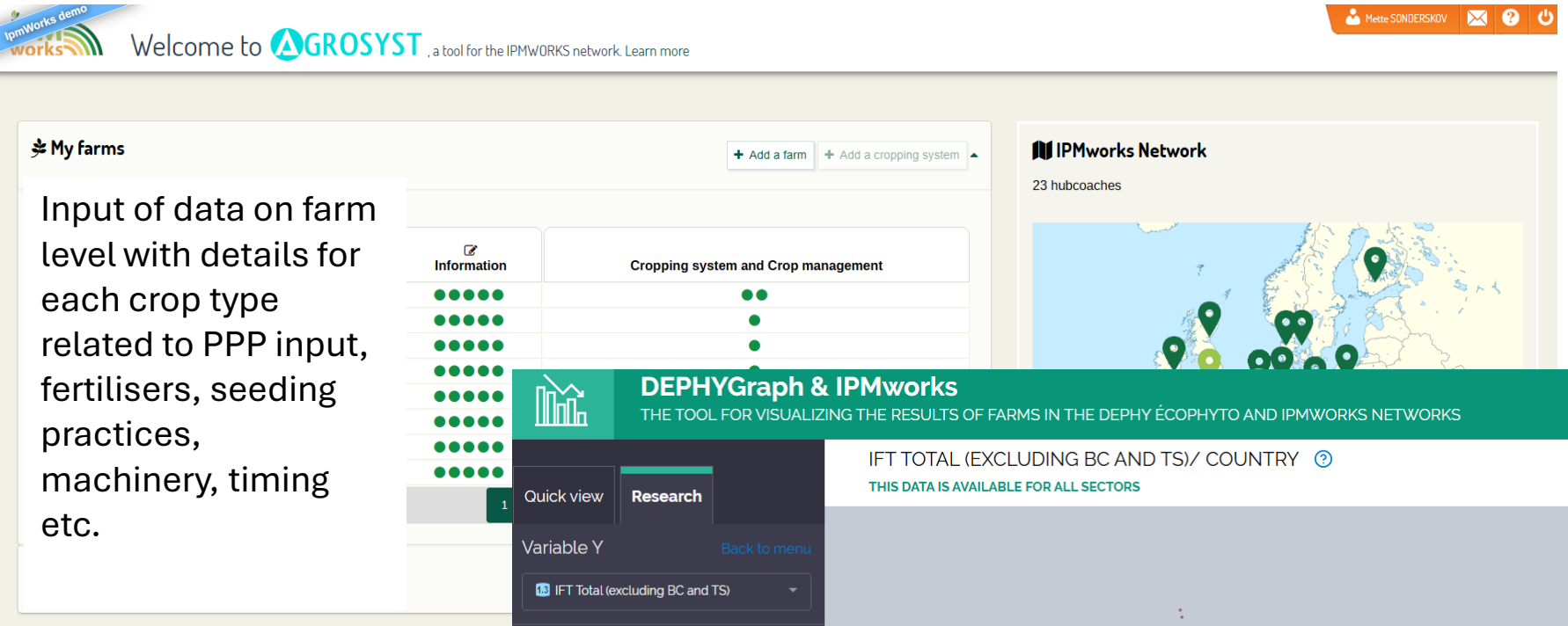
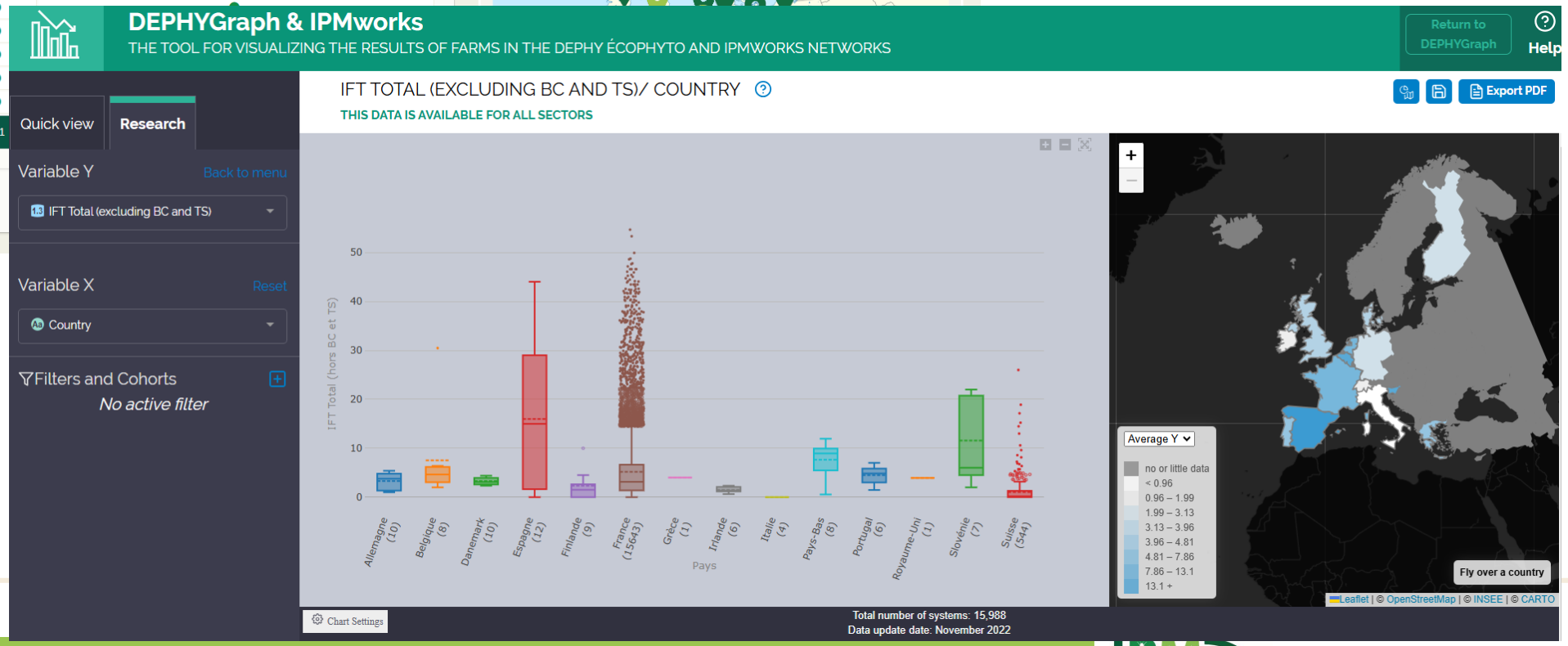
Survey #2 : Quantitative assessment with a high number of details recorded

Input of data on farm level with details for each crop type related to PPP input, fertilisers, seeding practices, machinery, timing etc.





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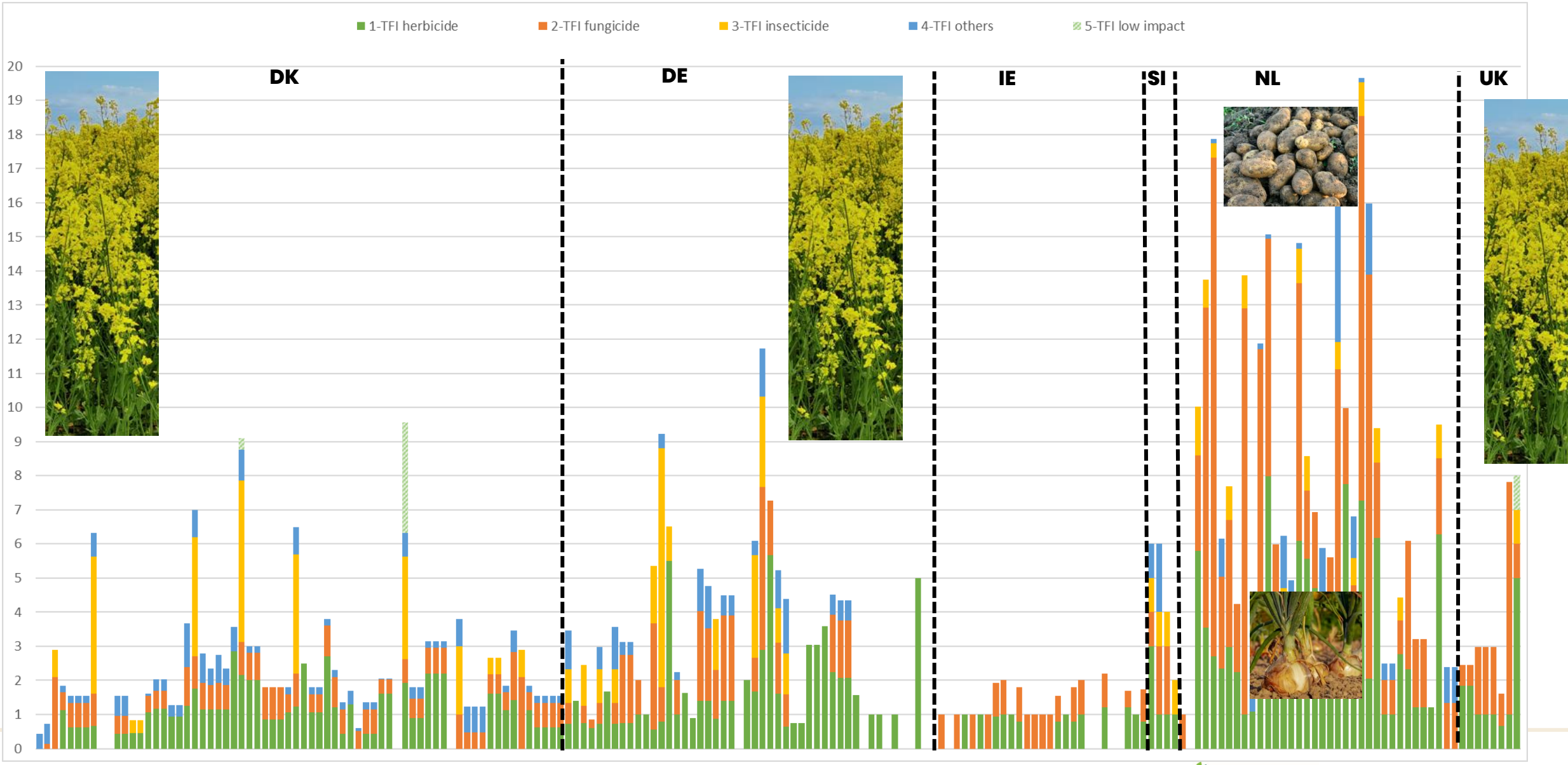
TFI of individual fields : TFI calculated as France do: The amount used divided by the minimum dose rate



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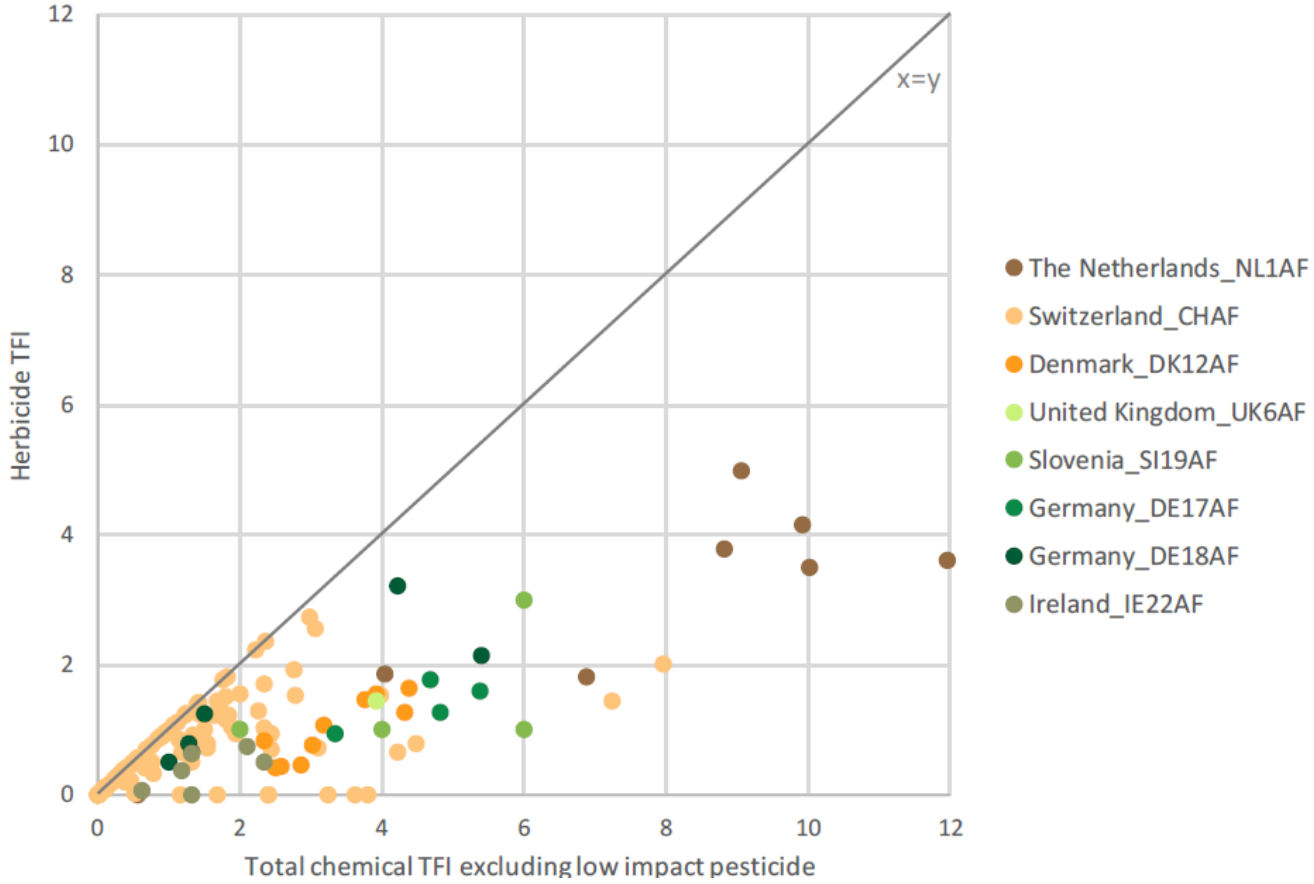
Highlights from Survey #2

Quantitative assessment with a high number of details recorded

Herbicide TFI as a function of total TFI



The lower the general TFI, the closer we are on the x=y line: this indicates that it is more difficult to decrease the use of herbicides than the other types of PPP

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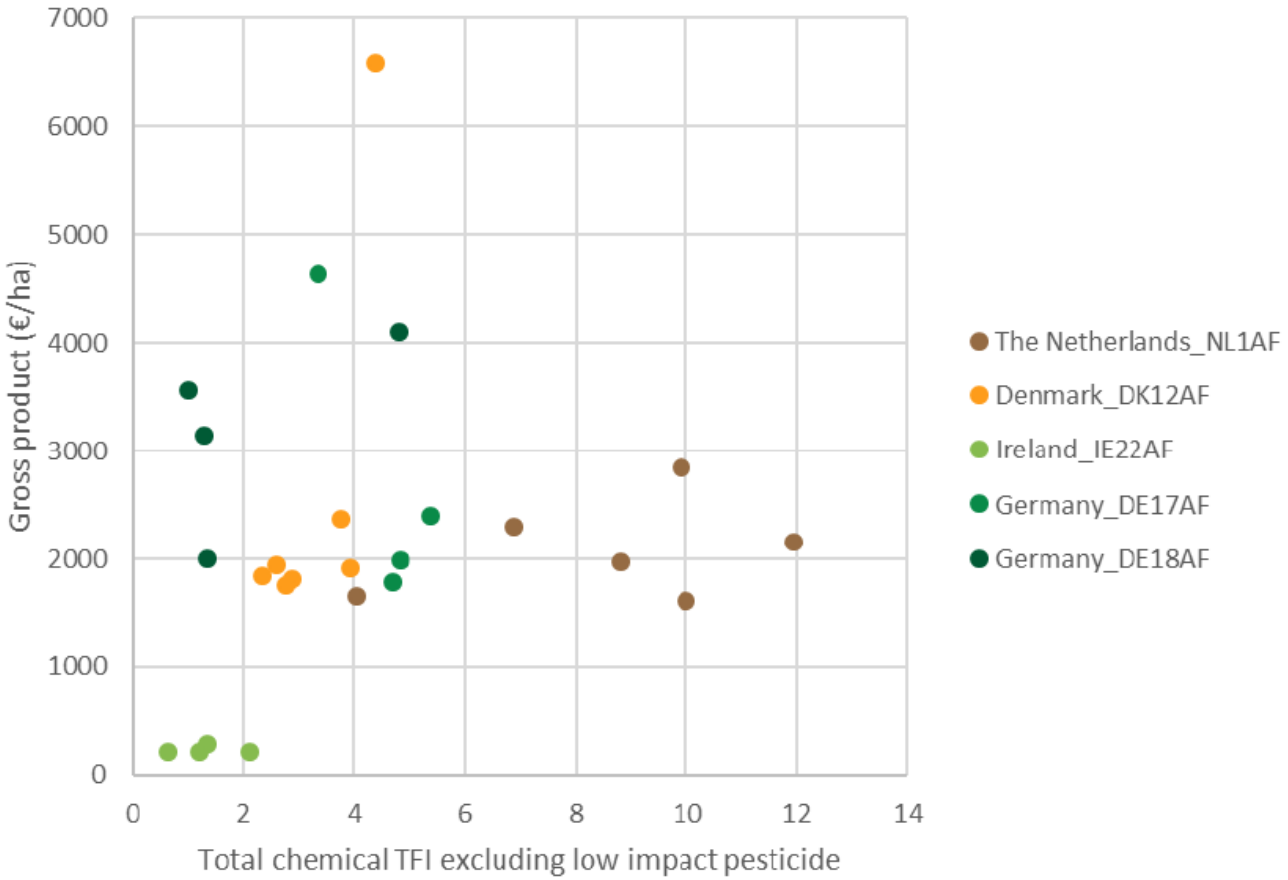
Highlights from Survey #2

Quantitative assessment with a high number of details recorded

Gross margin as a function of total TFI



There is no high correlation between a higher TFI and a high gross margin:
Farmers with lower TFI can equally well have a high profit as the farmers with higher TFI

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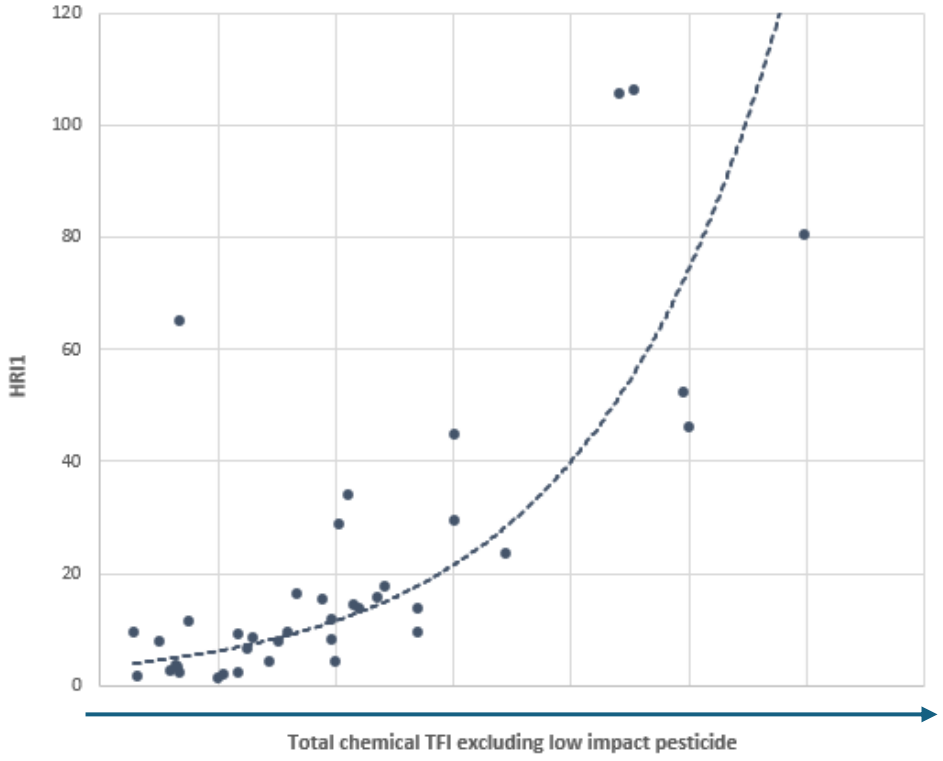
Highlights from Survey #2

Quantitative assessment with a high number of details recorded

Comparing other PPP use indicators to TFI

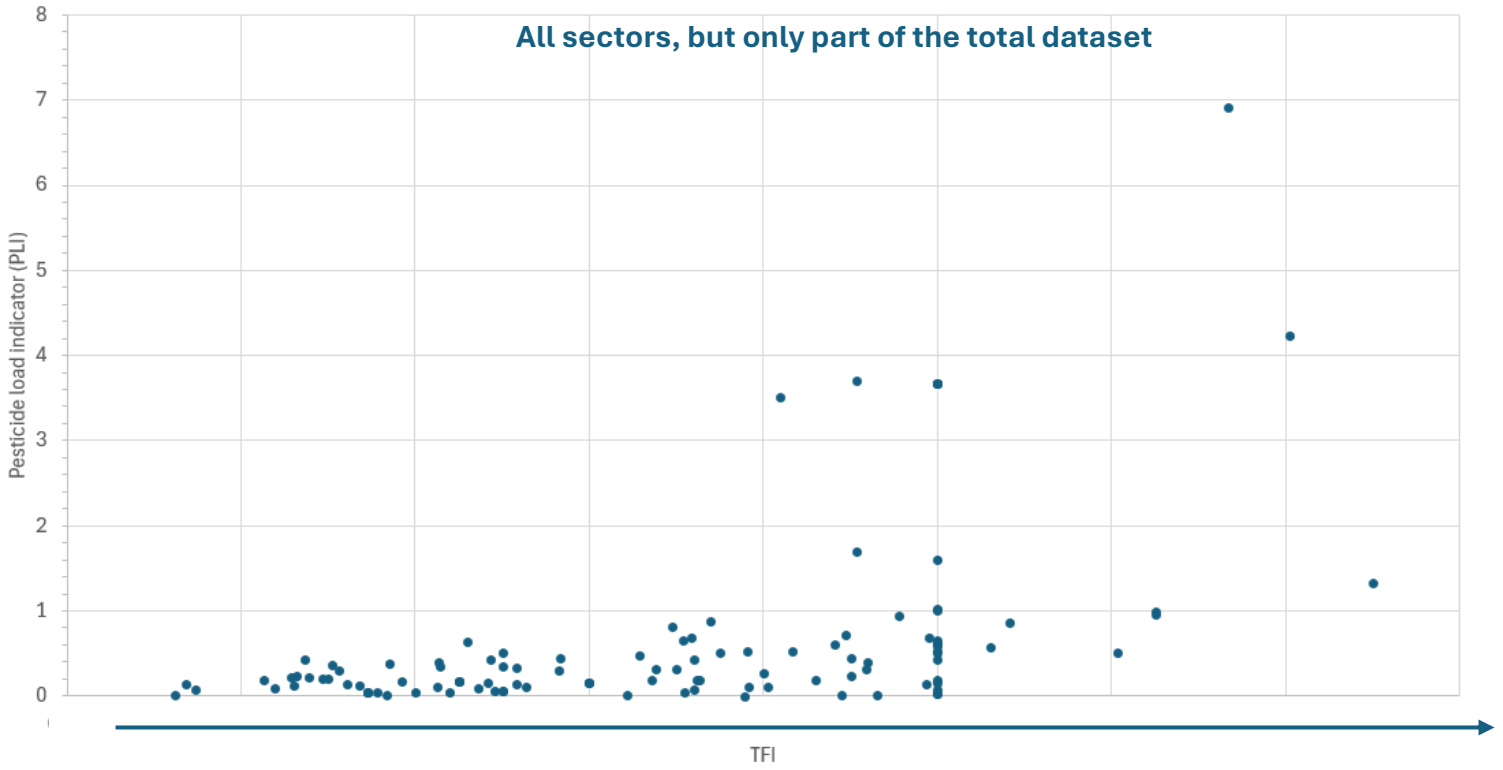
NOTE: WORK IN PROGRESS!

Harmonised risk indicator (HR1)



HR1 is calculated by multiplying the quantities of active substances in plant protection products placed on the market by a weighting factor
EU Directive 2019/782 (2009/128/EC)

Pesticide load indicator (PLI, a Danish indicator)



PLI = Ecotoxicity Load + Environmental Fate Load + Human Health Load.
The load of each part is based on the standard dose rate and parameters for fate, ecotoxicological or human health impact
*Kudsk, P., et al. (2018). "Pesticide Load—A new Danish pesticide risk indicator with multiple applications." Land Use Policy **70**: 384-393.*

IPM works
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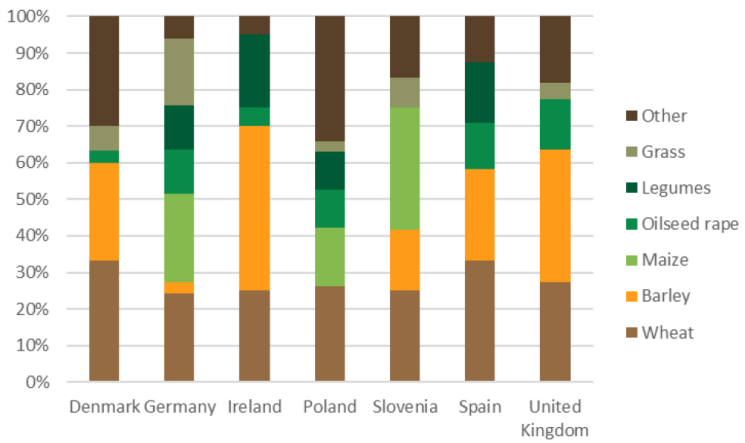
Survey #3: What changed during the time of the IPMworks project / qualitative self-assessment

NUMBER OF FARMS

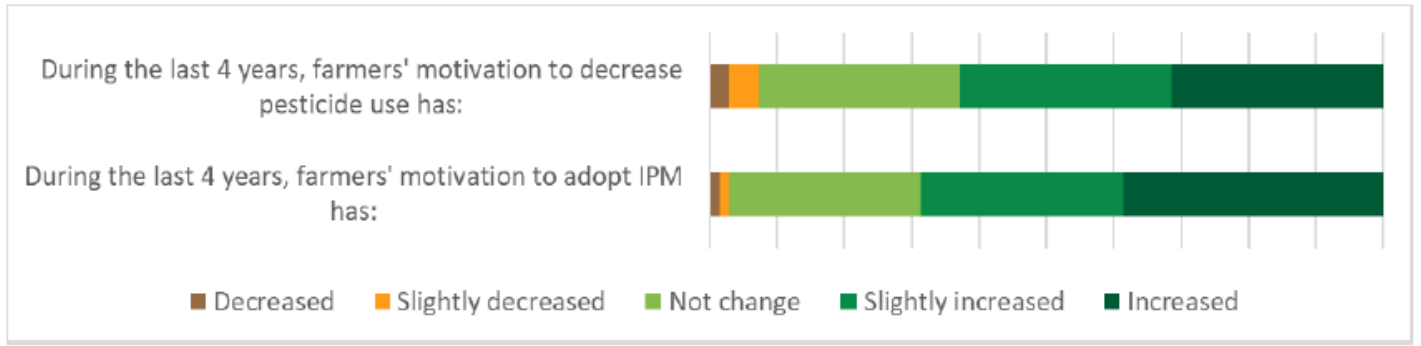
70

PARTICIPANT COUNTRIES

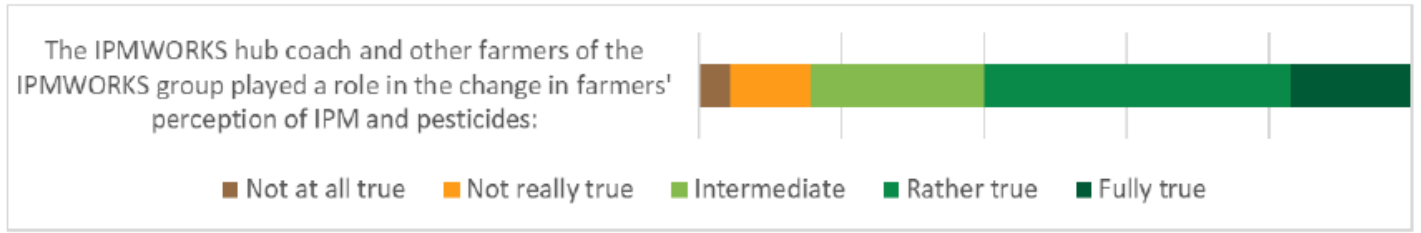
DENMARK, GERMANY, IRELAND, POLAND, SLOVENIA, SPAIN, UNITED KINGDOM



CHANGES IN MOTIVATION



CONTRIBUTION FROM HUB COACHES AND OTHER FARMS



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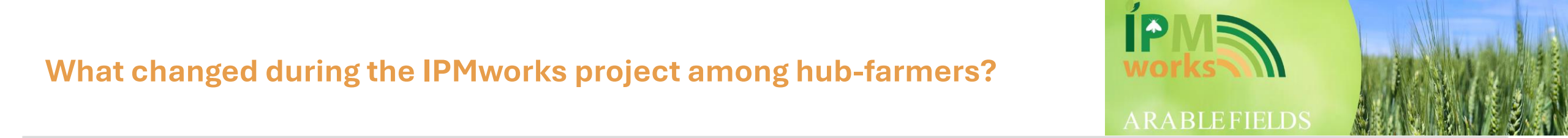
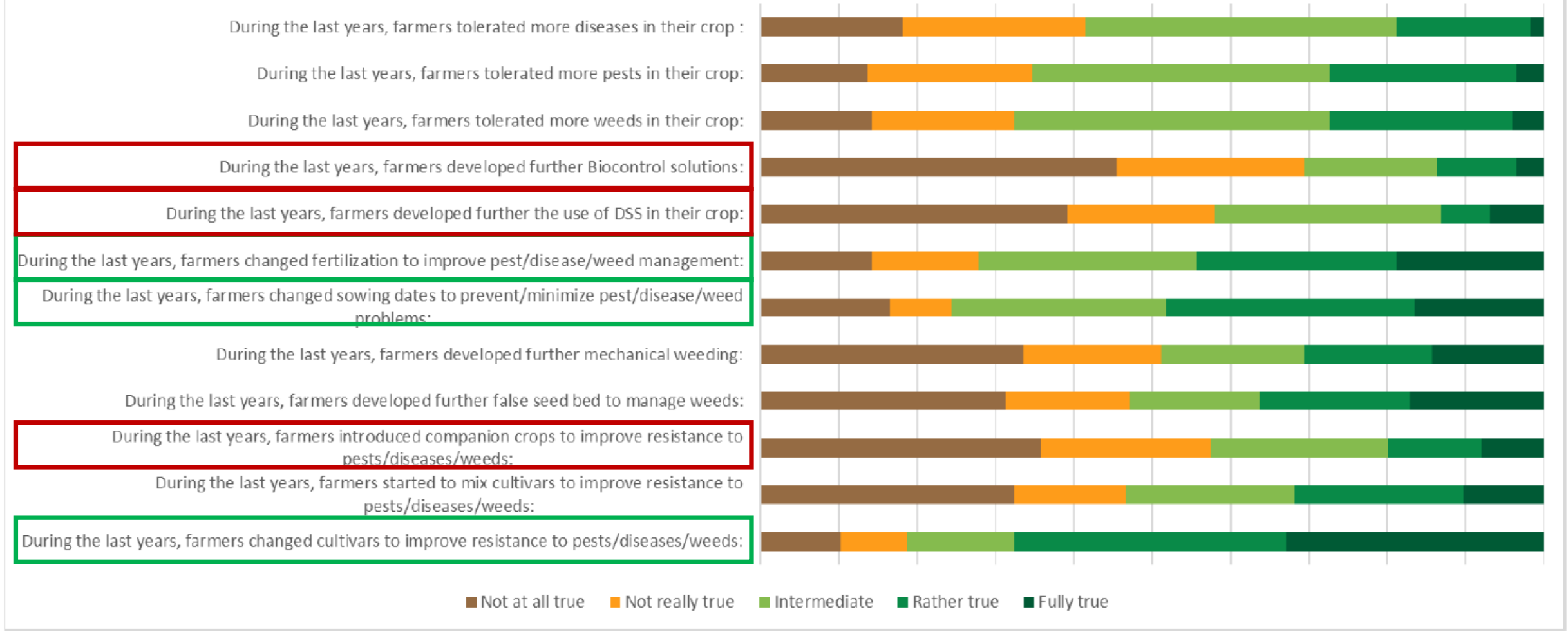
What changed during the IPMworks project among hub-farmers?





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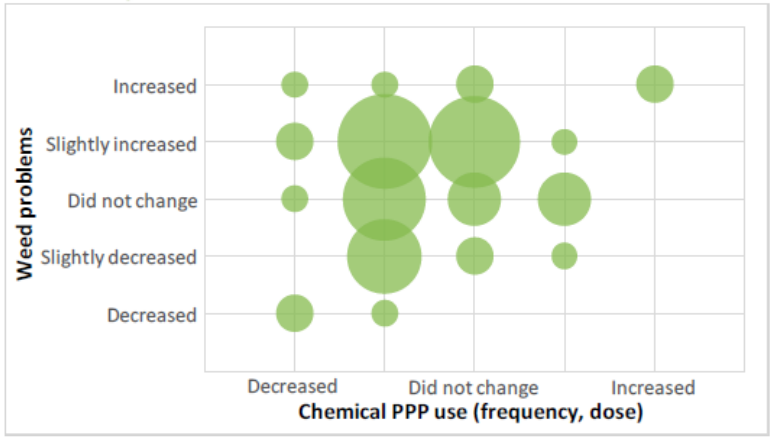
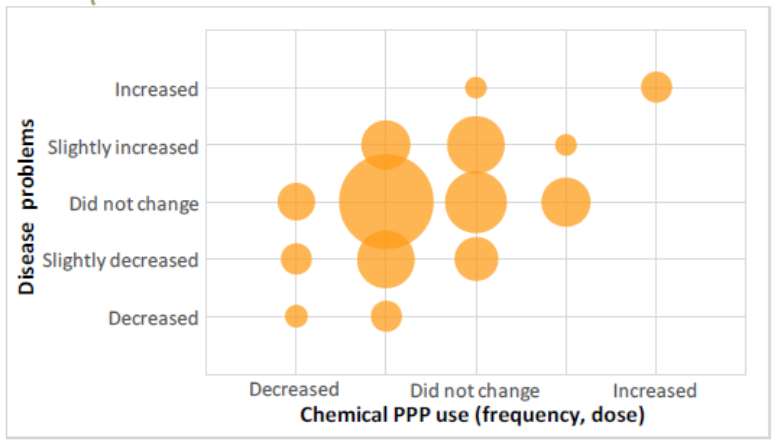
What changed during the IPMworks project among hub-farmers?

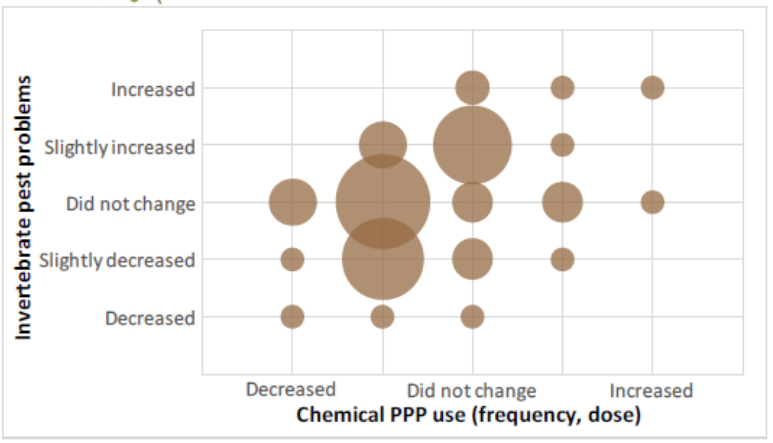
WEED PROBLEMS



DISEASE PROBLEMS



PEST PROBLEMS



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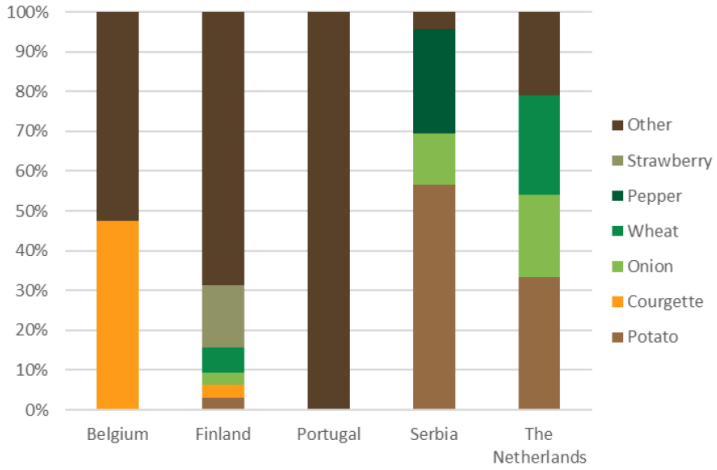
Survey #3: What changed during the time of the IPMworks project / qualitative self-assessment

NUMBER OF FARMS

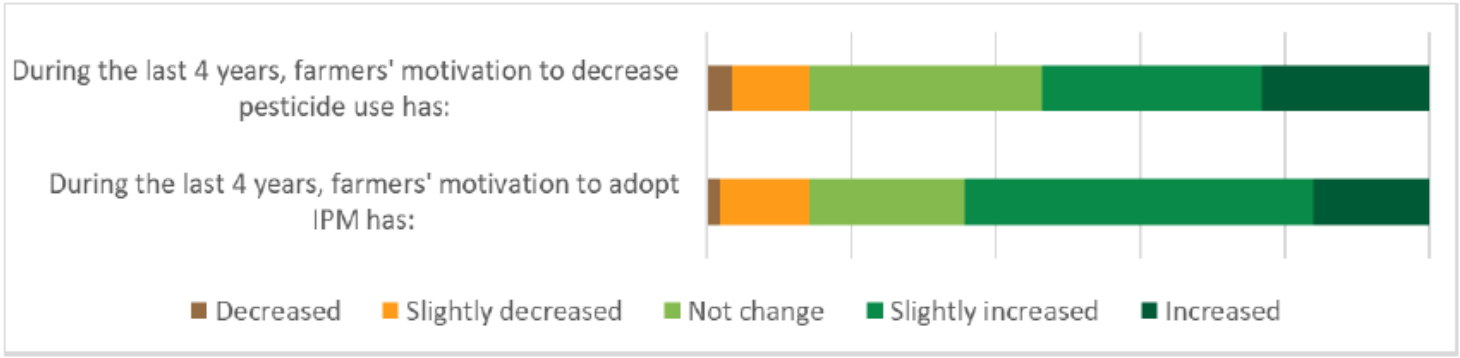
56

PARTICIPANT COUNTRIES

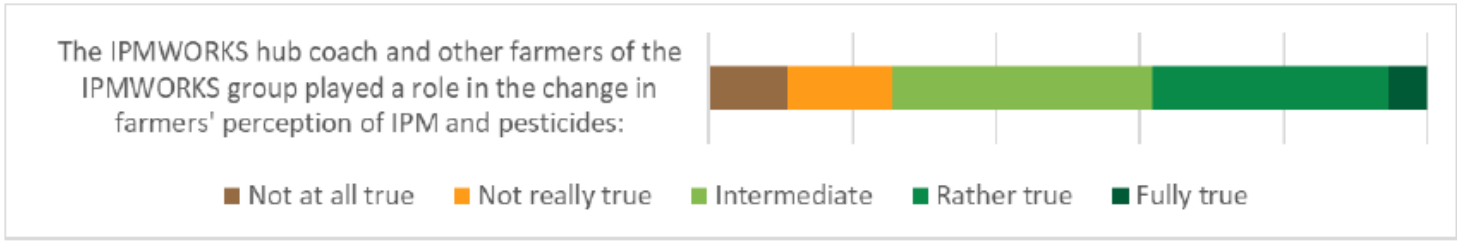
BELGIUM, FINLAND, PORTUGAL, SERBIA, THE NETHERLANDS



CHANGES IN MOTIVATION



CONTRIBUTION FROM HUB COACHES AND OTHER FARMS



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IPM works

An EU-wide farm network demonstrating and promoting cost-effective IPM strategies

FINAL WEBINAR – 12 March 2025 – 14:00-17:00 CET

Do we still need IPM?

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THANK YOU!

Mette Sønderskov | Aarhus University | mette.sonderskov@agro.au.dk

AARHUS UNIVERSITY

SOLIDUM PETIT IN PROFUNDIS · UNIVERSITAS ARHUSIENSIS

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Sharing farmer experiences with IPM

Bruno Neves, Portugal

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MY FARM WITHOUT PESTICIDES

Bart Piskorski

organic farmer

EKO-ŁAN, Poland

THE IDEA OF MY FARM

Organic farming

+

Small food processing

+

Directly to consumers

+

Demonstration farm

From Farm to Fork Strategy

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My Farm's description

1. Location: Kołodziejewo, Janikowo County, Poviat Inowrocławski, Kujawsko-Pomorskie region

2. Area: 33.5 ha

3. Soils: medium and light (from class 3 to 6)

4. Crops: oil plants (flax, black cumin, hemp, milk thistle, evening primrose, camelina), cereals (spelt, emmer, rye, rye, oats, buckwheat, common wheat), legumes (soybeans, lupine, peas), vegetables (potatoes, beetroot)

5. Processing: cold-pressed oils and flour

6. Own machinery for cultivation and harvesting (tractors, combine harvester, seed drills, weeder, etc.)

7. Own machinery for processing (oil press, grain and seed cleaning line)

AND INNOVATION PROGRAMME
UNDER GRANT AGREEMENT N. 101000339

Why organic farming?

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Organic farming - regression or modernity?

Many farmers
and people associated with agriculture
often perceive organic farming
as a regression in development,
which comes from a bad interpretation
and lack of openness to change.

They justify these opinions
by observing small organic farms,
mostly without with modern equipment
and run by people for whom nature
is more important
than the economic results
of the farm.

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Organic farming

the most modern form of running a farm
as it requires the use of modern techniques of land cultivation
(digital, mechanical, biological, organic chemistry)
to obtain high-quality agricultural products,
ensuring food security, without degrading the soil,
leaving it in an unimpaired condition for future generations.

Additionally, organic farming is closest to the idea of "from farm to fork", as organic products are a response to consumer needs.

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Cutting down on pesticides on my farm

The beginning was very difficult.

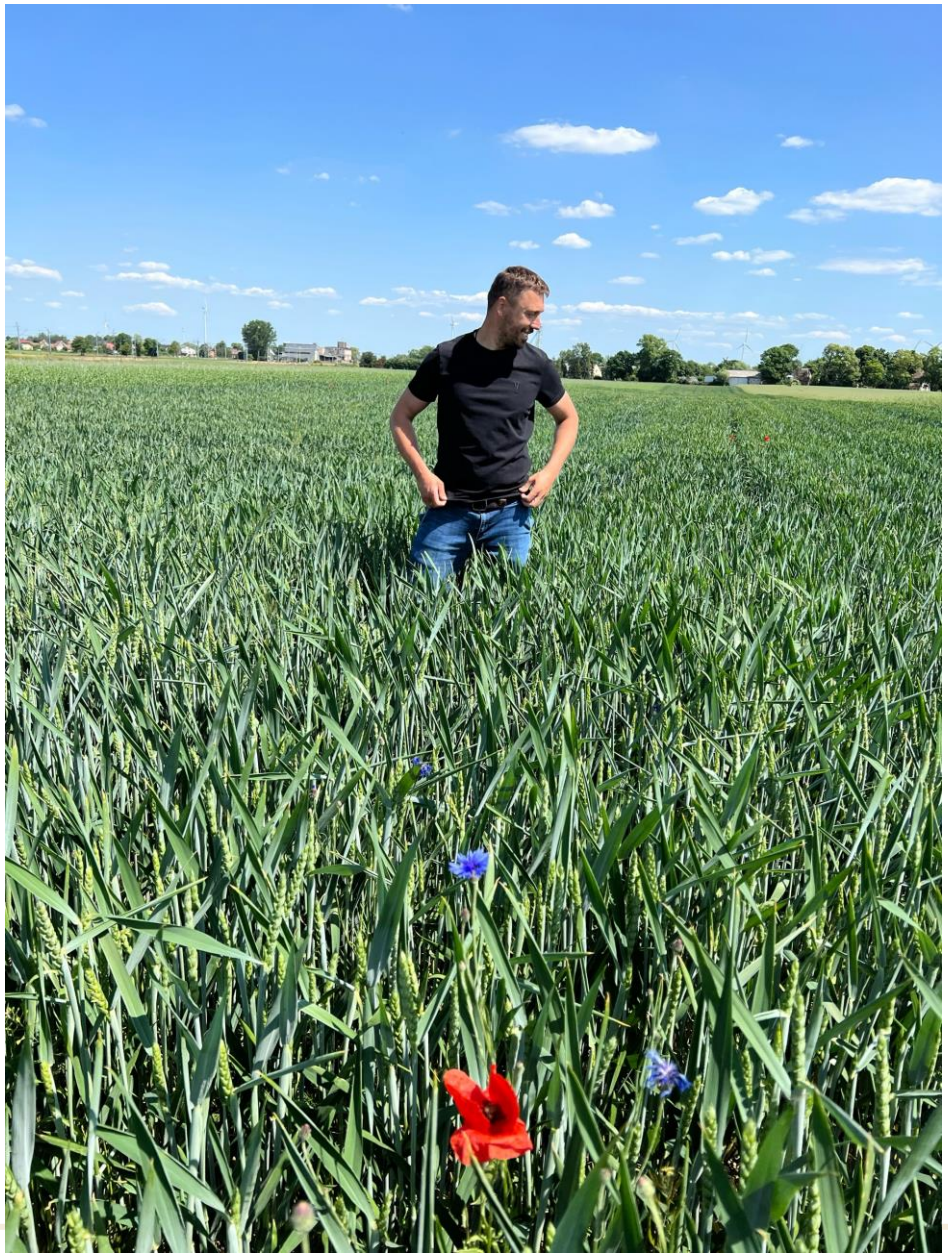
I had no experience.

The machines I used were of low efficiency.

I couldn't handle the weeds.

For several years I gained experience
and invested in modern equipment,
thanks to which I effectively limited weeds.
The knowledge I gained during study visits
helped me to design a good crop rotation system.

Joing the IPMWORKS network allowed me to exchange knowledge on both local and international level.



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Types of mechanical weed control

Mechanical weed control can be divided into two types:

1. Contiguous weeders
- work the whole field for example: tine weeder

2. Incontiguous weeders
- differentiated action for example: row crop cultivator

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Contiguous weeders

Contiguous weeders work the entire field surface and are also called ‘broad acre’ weeders.
As contiguous weeders weed the whole soil surface both crop and weeds alike, the crop must therefore be able to survive or ‘resist’ the weeding action while the weeds need to be susceptible to it. Contiguous weeders are somewhat analogous to selective herbicides that are applied to both weeds and crop, which kills the weeds while the crop survives. Contiguous weeders are mostly used in grass and arable crops, especially those sown with row spacings less than 20 cm, although some can also be used in hardier vegetable crops.

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Incontiguous weeders

Incontiguous weeders have gaps for the crop to pass through. The inter-row hoe is the classic example of this type of machine, where the inter-row space is vigorously hoed while the crop row is untouched. However, modern incontiguous machines often also have tools for weeding the intra-row. These are in turn divided into two types: non-discriminatory weeders apply the weeding action to crop and weeds alike and are therefore comparable to the contiguous weeders (see below for more detail), while the discriminatory weeders have a sensor to determine crop from weeds and then only apply the weeding tool to the weeds

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The cultivation of oil plants distinguishes our farm - photos from the cultivation of black cumin

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Processing and direct sales

This is an action that allows you
to shorten the route to the consumer
("from farm to fork”), which increases the farm's income.

Cold pressing oil and grinding grain into flour is our way of life.

We want the countryside to be associated with food production because it is here that everything begins with the soil.

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Processing and direct sales

Sales are conducted via the website, at fairs, festivals, to restaurants and directly at the farm.

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Farm demonstrations

We organize demo events and field trainings for guests from Poland and abroad

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Cooperation

My farm actively cooperates with farmers, universities, institutions, restaurants, media and companies from Poland and abroad.

We participate in varied projects (such as IPMWORKS), sharing the field and products.

In the photo:
Professor Józef Tyburski from the University of Warmia and Mazury - soybean cultivation in 2022 – our joint research on varieties.

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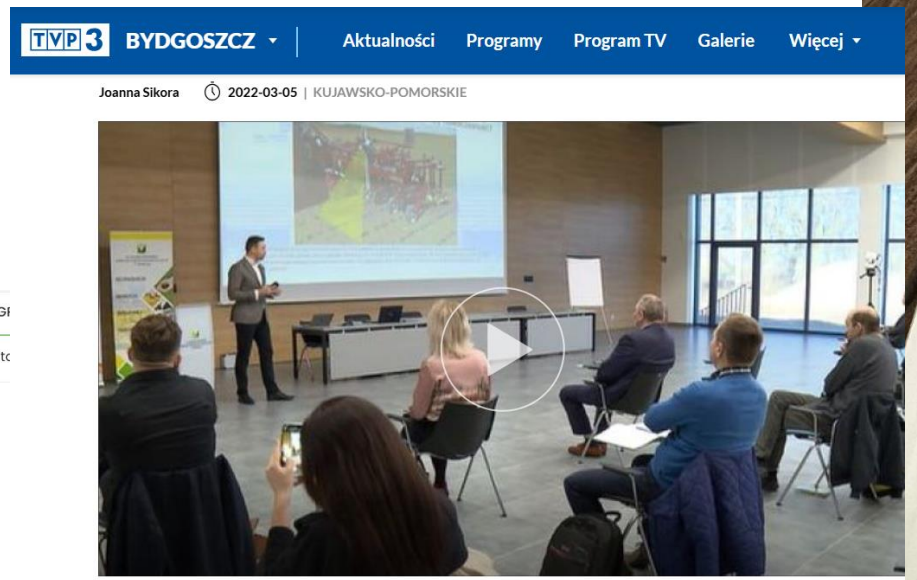
Media cooperation

Taking advantage of different channels (TV, Internet press, newspapers, social media)
to promote pesticides reduction



Gospodarze mogli m.in skorzystać ze szkolenia w KPODR w Minikowie

Wzrasta zainteresowanie żywnością ekologiczną, jednak w Polsce tylko ponad 3 proc. gospodarstw stawia na taką produkcję. Aby zwiększyć zainteresowanie rolników organizowane są szkolenia i konferencje, które mają zachęcić do zmiany stylu gospodarowania. Eksperci są optymistami twierdząc, że areał upraw powoli, ale będzie

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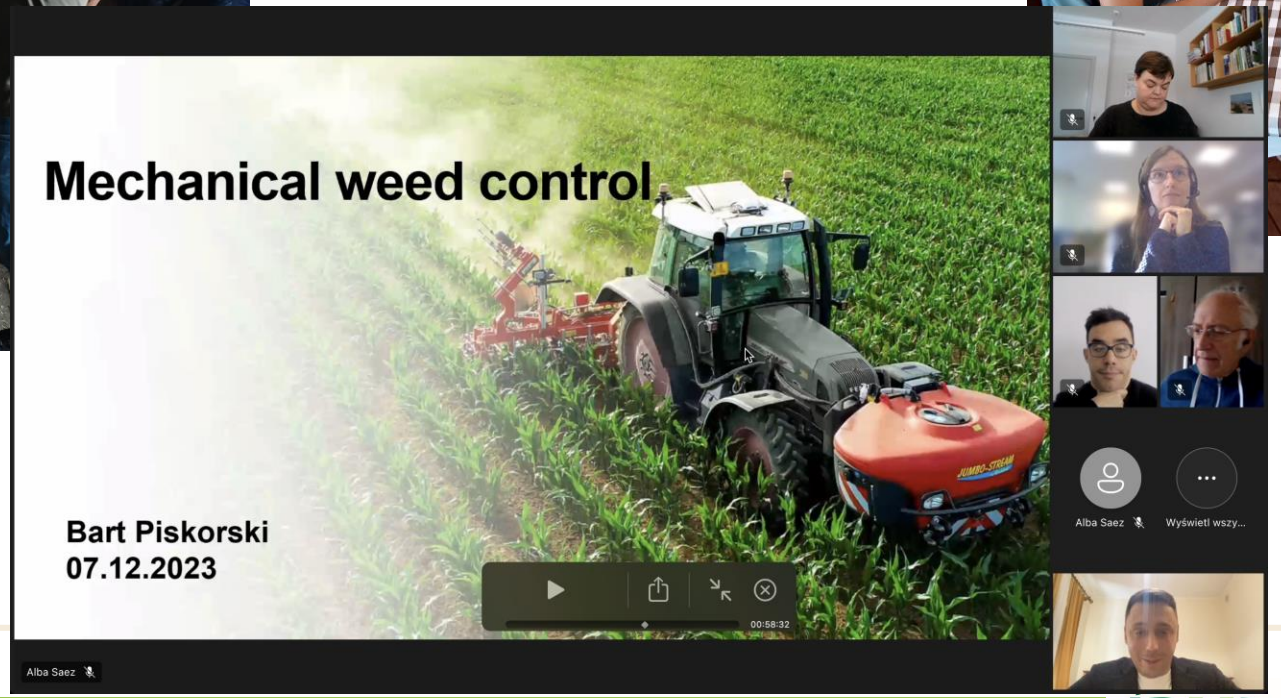
Knowledge exchanges, more and less formal

Participating in demo events, trainings, conferences and study trips
in Poland and abroad is a very important element of the farm's development.



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Sharing and exchanging knowledge at universities, agricultural schools, conferences and trainings

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The path I have chosen is not an economic choice but a **calling**.

Not always the work that provides maximum profit will bring health, joy and happiness in life.

Fulfilling a calling is not always a bed of roses.
It costs many sacrifices and struggles
with challenges beyond our control.

Still, **I would not do it any other way!**

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An EU-wide farm network demonstrating and promoting cost-effective IPM strategies

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THANK YOU!

Bart Piskorski | bartlomiejpiskorski@gmail.com

IPMWORKS consult: Anna Kaszkowiak-Nowacka, KPODR | anna.kaszkowiak@kpodr.pl

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The centrale role of Hub Coaches for facilitating peer-to-peer learning & IPM adoption

Jolien Claerbout | Inagro vzw

How do I work as a hub coach?

Who am I?

What after IPMWORKS?

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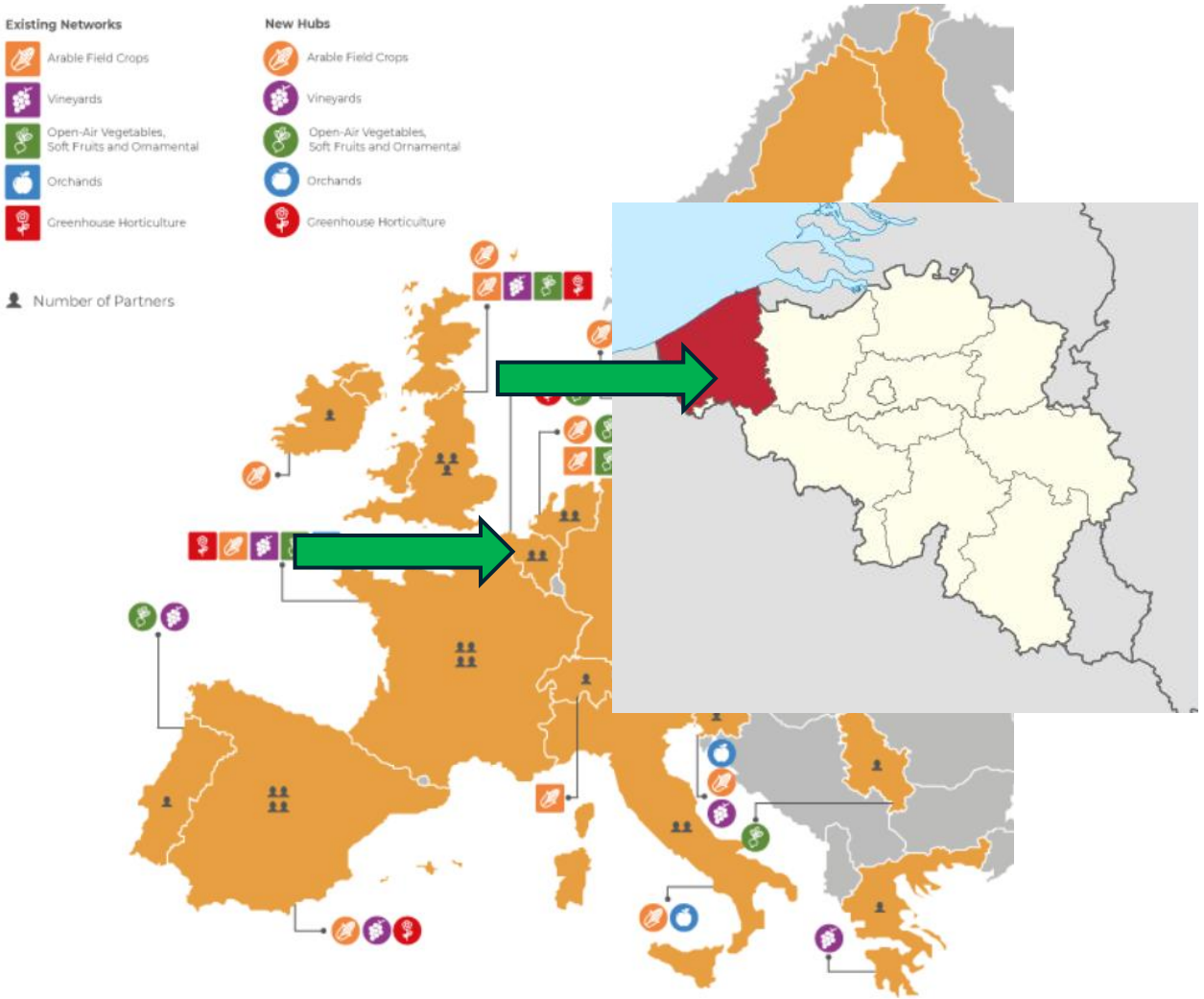
Who am I?



inagro

RESEARCH & ADVICE IN AGRICULTURE & HORTICULTURE

Who am I?

Hub:

- 11 Farmers
- Strawberries (soil/hydroponics), raspberry

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How do I work as a hub coach?

1. Hub

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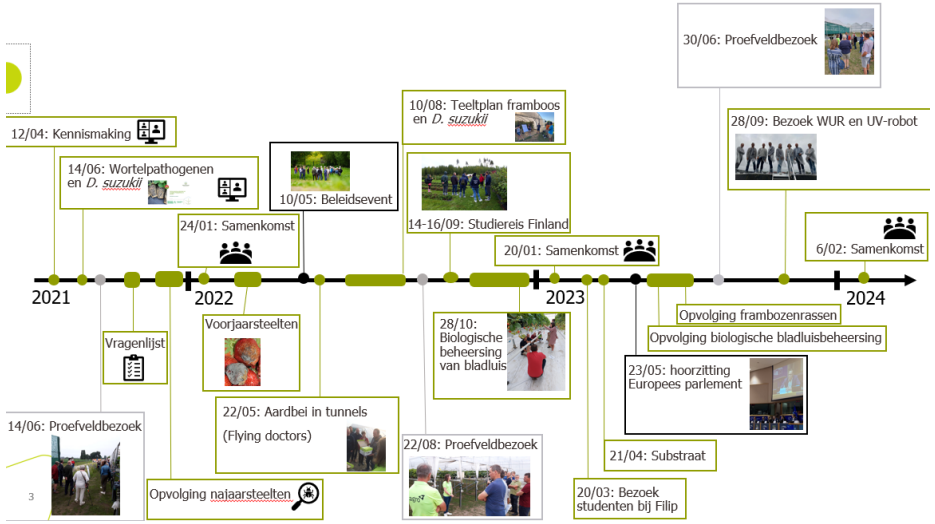
How do I work as a hub coach?

1. Hub

- Decide on the program
- Organise activities
  - Exchange knowledge
  - Introduce research
  - Introduce ‘ready-to-use’ IPM techniques



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How do I work as a hub coach?

1. Hub

2. Individual

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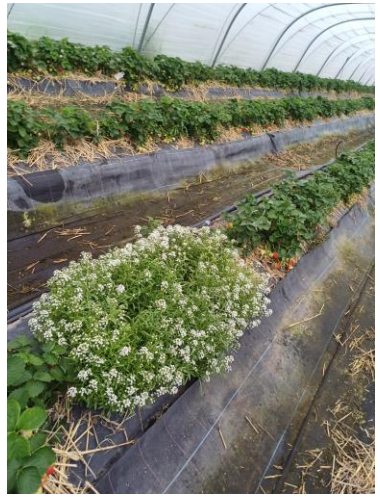
How do I work as a hub coach?

2. Individual

- 1-2-1 advice
- Monitoring of IPM-techniques



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How do I work as a hub coach?

1. Hub

2. Individual

3. Broader public

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How do I work as a hub coach?

- Organise demonstration events
- Communicate about holistisc IPM

Importance of the strawberry variety

Aphid control in strawberries

3. Broader public

Management of *Drosophila suzukii*

Flying doctors in soil-grown strawberries

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How do I work as a hub coach?

1. Hub

2. Individual

3. Broader public

4. International

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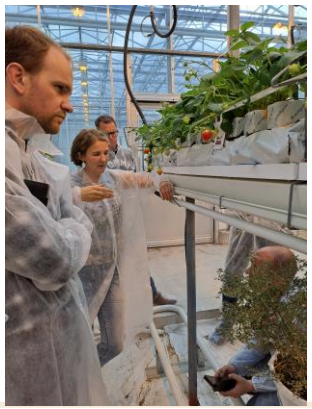
How do I work as a hub coach?

- Exchange between hub coaches
- Cross visits
- Policy events
- Attend international symposia and conferences



4. International

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What after IPMWORKS?

- Continue on regional level
- Looking for a way to collaborate on international level

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The various IPMWORKS channels for dissemination

Joaquín Balduque| CIHEAM Zaragoza

CIHEAM ZARAGOZA

IPMWORKS DEMONSTRATION EVENTS

Demonstration events 2021-2024

- 22 hubs organised events for 4 years
- 2021 low number of events → barriers by COVID
- Different sectors
- In total 250 events

IPM works

An EU-wide farm network demonstrating and promoting cost-effective IPM strategies

Hub	Sector	Partner	Country	2021	2022	2023	2024	Total 2021-2024
2	Arable	WR	NL		4	5	1	10
5	Arable	KPODR	PL		4	3	4	11
6	Arable	JHI	UK		2	7	3	12
9	Arable	SSSA	IT		4	3	5	12
11	Arable	DL	DK	3	4	3		10
12	Arable	VELAS	DK		2	3	5	10
13	Arable	BIOSENSE	RS		2	5	4	11
15	Arable	INTIA	ES	1	3	2	4	10
17	Arable	JKI	DE		4	3	4	11
18	Arable	GLZ	DE		1	3	6	10
22	Arable	Teagasc	IE		7	6	5	18
19	Arable, vegetable, ornamentals	KGZ MB	SL	1	9	4	0	14
4	Greenhouse	INAGRO	BE		5	5	4	14
16	Greenhouse	COEXPHAL	ES	3	3	4	0	10
10	Orchards	SSSA	IT		2	3	5	10
1	Vegetables	Delphy	NL			7	5	12
3	Vegetables	INAGRO	BE		3	3	4	10
8	Vegetables	Consulai	PT	3	1	4	2	10
20	Vegetables	ProAgria	FI		1	7	7	15
7	Vineyards	Consulai	PT	2	1	4	3	10
14	Vineyards	FEUGA	ES		3	4	3	10
21	Vineyards	AUA	Gr			5	5	10
		Totals		**13**	**65**	**93**	**79**	**250**

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Example of best demonstration event Field-Demonstration: EcoRobotix ARA Spot Sprayer

Innovative Weed Control with Precision Technology

What?

Demonstration of the EcoRobotix ARA spot sprayer in onions & sugar beets, targeting various weeds (e.g. potato volunteers)

How?

- Advanced camera technology for selective weed recognition
- 85-95% reduction in pesticide use
- High speed & capacity, practical for modern farming

Event Highlights

- Presentation by Doorgrond: Machine operation, benefits & Q&A (52 farmers attended)
- Live field demo: Precision spraying (using water) to show accuracy
- Expert discussions on herbicide use, crop safety & ROI

Key Takeaway

- Sustainable & efficient weed management with reduced chemical input!

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IPMWORKS TOOLBOX LIVE

HOME ABOUT TOOLBOX NEWS NETWORKS RESULTS & RESOURCES

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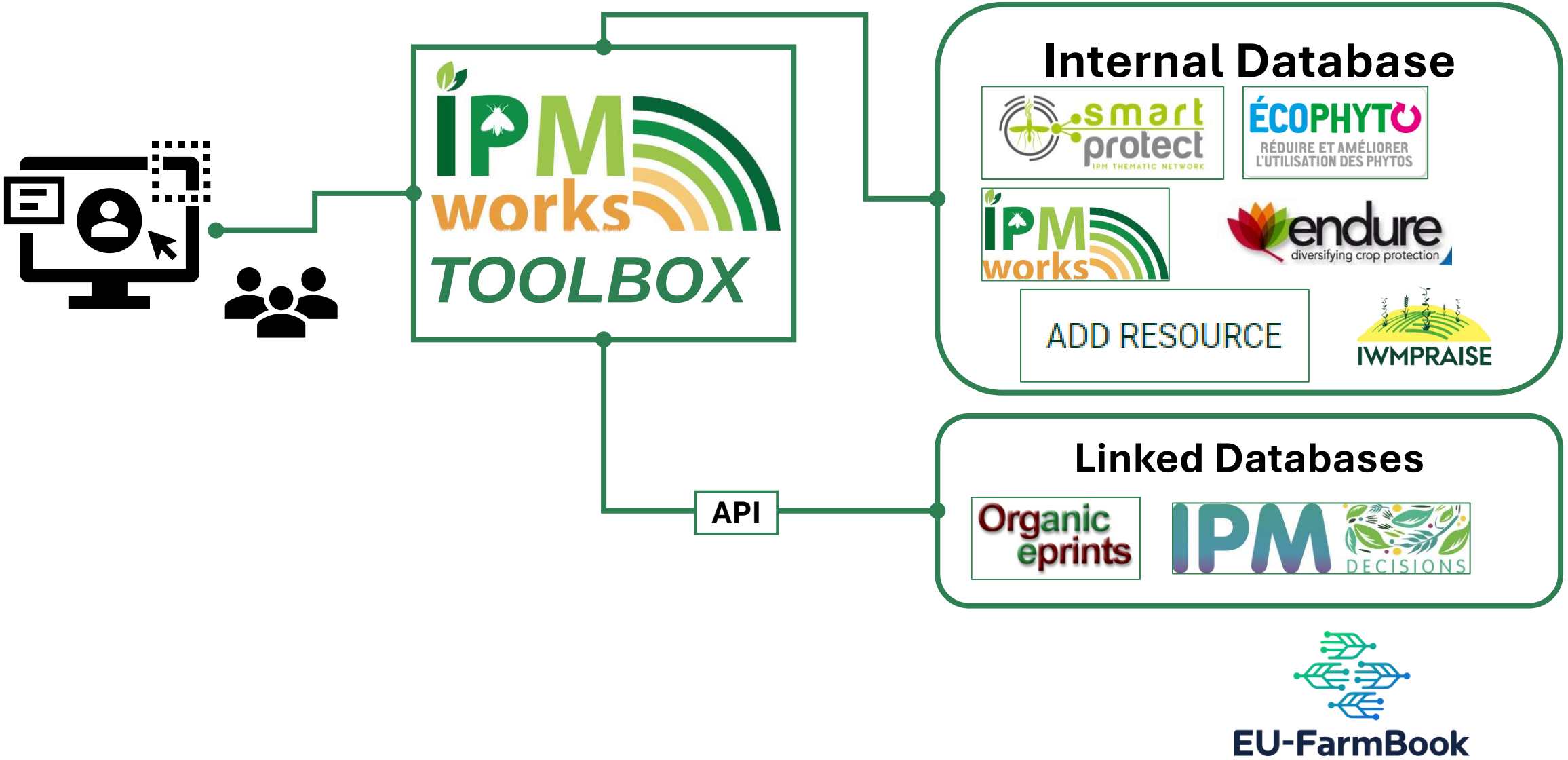
IPMWORKS TOOLBOX



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Adding Resources

Add resource

Short description

Short description is required

Long description (in English, 500 words)

Long description is required

Long description (in native language, if not English,

(...)

by ticking this box you confirm that you have read and accept Part 1 of the Toolbox Terms and Conditions. You can contact IPMWORKS-WP4@inrae.fr at any time to amend or remove your submission.

This is required

Back | Save resource

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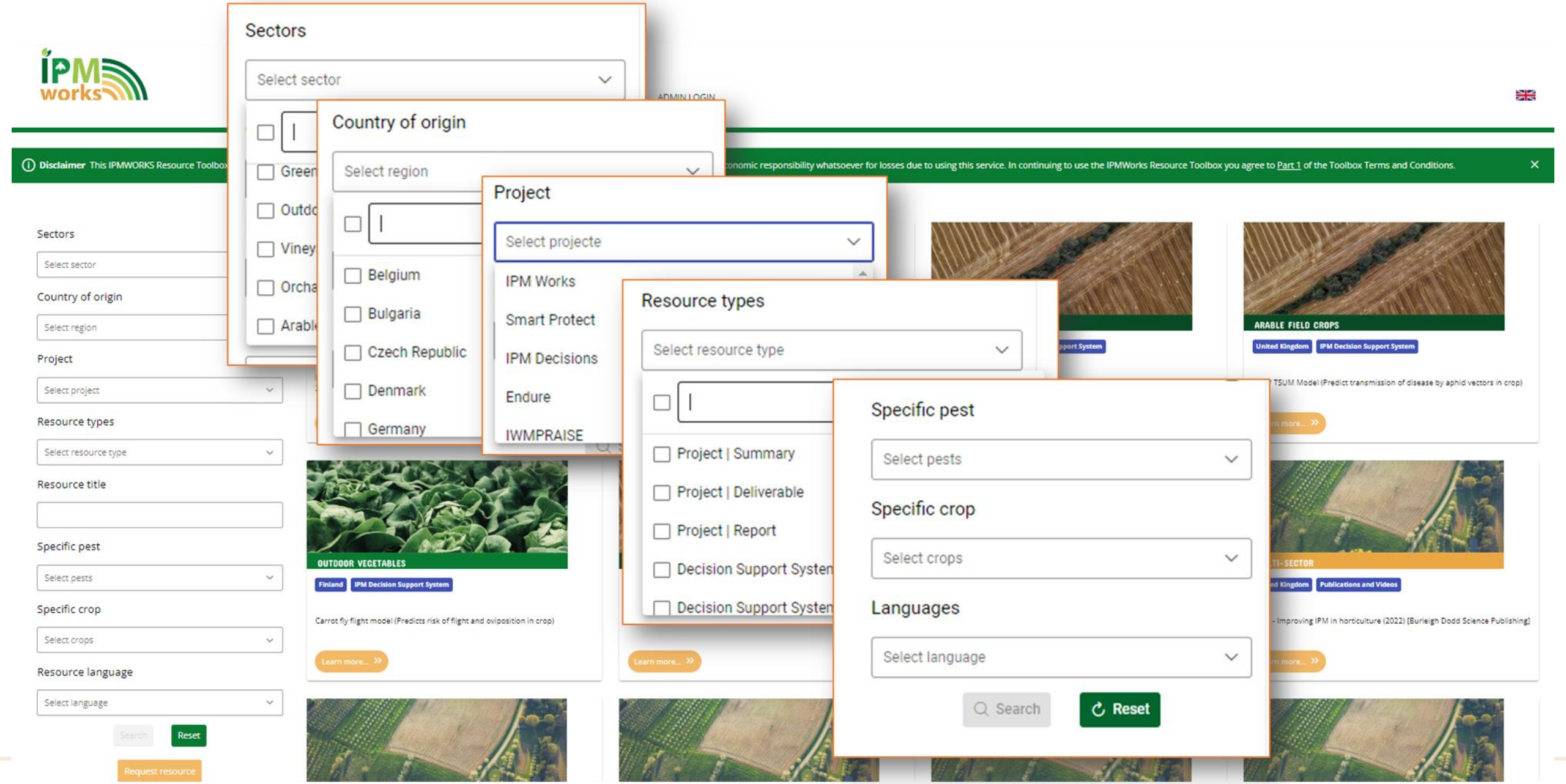

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Sectors

Select sector

Country of origin

Select region

Project

Select project

Resource types

Select resource type

Resource title

Specific pest

Select pests

Specific crop

Select crops

Resource language

Select language

Search Reset

Request resource

MULTI-SECTOR

EU IPM Project

IPM Decisions Stepping-up IPM decisions support for crop protection [2019-2024]

Learn more...

ARABLE FIELD CROPS

United Kingdom Pest Monitoring

Pollen beetle treatment thresholds (UK oilseed rape)

Learn more...

ARABLE FIELD CROPS

United Kingdom IPM Decision Support System

LEAF Simply Sustainable IPM Guide

Learn more...

ARABLE FIELD CROPS

United Kingdom IPM Decision Support System

BYDV TSUM Model (Predict transmission of disease by aphid vectors in crop)

Learn more...

OUTDOOR VEGETABLES

Finland IPM Decision Support System

Carrot fly flight model (Predicts risk of flight and oviposition in crop)

Learn more...

ARABLE FIELD CROPS

France Economics

Technical and economic implication of IPM

Learn more...

MULTI-SECTOR

United Kingdom Publications and Videos

Burleigh Dodd Science Publishing - IPM Collection featuring over 120 chapters covering all aspects of IPM.

Learn more...

MULTI-SECTOR

United Kingdom Publications and Videos

Book - Improving IPM in horticulture (2022) [Burleigh Dodd Science Publishing]

Learn more...

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IPMWORKS TOOLBOX

HOME ADD RESOURCE E-TRAININGS IPMWORKS PROJECT HELP AND SUPPORT ADMIN LOGIN

IPM Decisions Stepping-up IPM decisions support for crop protection [2019-2024]

Project	IPM Decisions
Resource language	English
Resource origin	https://www.platform.ipmdecisions.net/
Resource type	IPM Project
Organization name	RSK ADAS Ltd
Contact email	Mark.Ramsden@adas.co.uk
Contact phone	
Citation (DOI)	
Creation date	20. 12. 2023.

Find out more

IPM Decisions short project description.pdf

Project Information
IPM Platform
IPM Decisions

Short summary

The IPM Decisions Platform will give farmers and advisers across Europe access a large number of IPM decision support systems. User will access the Platform via a tailored 'dashboard', specific to their requirements. The dashboard will act as the user's control panel to collate information and manage DSS applications.
Farmers & Advisors - benefit from a simple 'click and go' platform to find and run decision systems which have been evaluated for use under their regional conditions. Access to relevant weather data is provided though the platform. The extent of validation of each DSS is transparent to enable informed choices.
Applied researchers - benefit from access to decision systems, weather data, a data set of field pest observations from large numbers of sites and seasons, and a library of methods for evaluation and comparison of benefits.
Academic researchers - can to adapt decision models to their regional conditions, and rapidly evaluate the effect of the changes using the library of methods for evaluation and comparison of benefits described above.
System developers - benefit by a 'shop window' to access more end users, and tools and resources to accelerate DSS innovation.

The Platform supports a wide range of DSS which are either free to use or commercial pay to use.

The first link below is to the official EU project information site on CORDIS
The second link is to the IPM Decisions Platform
The third link is to the IPM Decisions project website

The video provides a quick demonstration of the platform

Sectors	
Regions	EU
Relevant pest(s)	Alternaria leaf blight, Alternaria leaf spot, Apple fruit moth, Barley Yellow Dwarf Virus, Bird cherry-oat aphid, Cabbage fly, cabbage stem flea beetle, Carrot fly, Codling moth, Cutworm (Turnip moth), Diamondback moth, Early blight of potatoes, English grain aphid, Orange Wheat Blossom Midge, Peach-potato aphid, pollen beetle, Potato late blight, Potato leaf blight, Saddle gall midge, Septoria leaf tritici blotch, Silver Y moth, Small cabbage white, Yellow rust
Relevant crop(s)	Oilseed rape, Spring Barley, Winter barley, Durum wheat (spring), Durum wheat (winter), Soft wheat (spring), Sof wheat (winter, Spring rye, winter rye, Oats, Maize, Potato, Sugar beet, Cabbage, Carrots, Parsnips, Celery, Onion, Apple, Pear, Olives, Grapes

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Get trained in Integrated Pest Management!!

The **H2020 IPMWORKS** has launched its e-learning modules

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H2020 IPMWORKS e-learning training modules

The IPMWORKS e-learning modules have been prepared based on successful experiences within the project network, including technical aspects of IPM strategies, farm performance or co-innovation and method for farm hub coaching, targeting both farmers and advisers. Modules on agroecosystem approach, on holistic pest management examples and on the key topic of policies are also included to frame the technical ones.

The materials that compose the modules focus on IPM technical aspects, IPM efficiency to gain sustainability, and methods for coaching farmers towards the adoption of cost-effective IPM strategies, based on both existing IPM resources and holistic management examples produced by the IPMWORKS network. These materials consist of, on the one hand, presentations reflecting the theoretical content and the selected resources for each theme, and, on the other hand, recorded videos of the lectures of these presentations.

These module packages can be adapted to national needs and local contexts, since they have been produced to be used like an interactive training catalogue. In line with this purpose, the modules are divided in short chapters, enabling the access to specific chapters according to the national needs and local contexts of the modules' users.

FINAL WEBINAR – 12 March 2025 – 14:00-17:00 CET

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IPMWORKS e-learning modules

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- **Module 1: Agrosystem/Agroecosystem: Concepts and theory. Holistic approach to IPM**
- **Module 2: Plant health risk challenges and Policy context in the EU**
- **Module 3: Integrated Weed Management (IWM)**
- **Module 4: Integrated Disease Management (IDM)**
- **Module 5: Integrated Invertebrate Pest Management (IIPM)**
- **Module 6: Holistic IPM examples**
- **Module 7: Assessment of an IPM system**
- **Module 8: Soft skills for facilitating interactive learning and demonstration on IPM**

Coordinated by CIHEAM – Zaragoza
Based on the expertise of the 31 project partners

46 chapters / videos (15-20')

A topic explained by an IPMWORKS expert

+ re-usable presentations

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IPMWORKS e-learning modules

Module 4: Integrated Disease Management (IDM)

Module 4 focuses on diseases management and on the challenges we are facing in agriculture, considering three main aspects, which are climate change, the need and request to reduce the use of plant protection products, and last but not least, the resistance management. The module gets into the context of Sustainable Agriculture and applied epidemiology for disease control. In addition, it presents 3 cases studies: Arable crops (wheat), Horticultural crops (processing tomato) and Perennial crops (grapevine). This module introduces the multiple modelling approach Decision Support Systems (DSSs). The content present different IPM tools for the following crops / diseases with 3 cases studies: i) Wheat / Fusarium head blight, ii) Tomato / Downy mildew, Alternaria leaf blight and Bacteriosis and iii) Grapevine / Downy mildew.

Module leader: Tito Caffi (UCSC).

IPMWORKS e-learning training: 4.1 Current challenges in disease control

Project	IPM WORKS
Resource language	English
Resource origin	https://ipmworks.net/toolbox/en/#/e_training
Resource type	Training
Organization name	
Contact email	nicolas.munier-jolain@inrae.fr
Contact phone	
Citation (DOI)	
Creation date	19. 01. 2024.

Short summary

IPMWORKS e-learning Module 4: Integrated Disease Management (IDM).

Module 4 focuses on diseases management and on the challenges we are facing in agriculture, considering three main aspects, which are of climate change, the need and request to reduce the use of plant protection products, and last but not least, the resistance management. The module gets into the context of Sustainable Agriculture and applied epidemiology for disease control. In addition, it presents 3 cases studies: Arable crops (wheat), Horticultural crops (processing tomato) and Perennial crops (grapevine). This module introduces the multiple modelling approach Decision Support Systems (DSSs). The content present different IPM tools for the following crops / diseases with 3 cases studies: i) Wheat / Fusarium head blight, ii) Tomato / Downy mildew, Alternaria leaf blight and Bacteriosis and iii) Grapevine / Downy mildew.

Module leader: Tito Caffi (UCSC).

4.1. Current challenges in disease control
4.2. Disease management in the context of Sustainable Agriculture
4.3. Applied epidemiology for disease control
4.4. Case study. Arable crops: wheat
4.5. Case study. Horticultural crops: processing tomato
4.6. Case study. Perennial crops: grapevine

The IPMWORKS e-learning modules have been prepared based on successful experiences within the project network, including technical aspects of IPM strategies, farm performance or co-innovation and method for farm hub coaching, targeting both farmers and advisers. Modules on agroecosystem approach, on holistic pest management examples and on the key topic of policies are also included to frame the technical ones.

All e-learning training modules can be found in the IPMWORKS Toolbox training tab.

Resources:

- Attachment 1: PDF of Chapter 4.1 training slides

- Link: IPMWORKS Training page, providing links to all training modules

- YouTube Link: A recording of Chapter 4.1: Current challenges in disease control

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IPMWORKS e-learning modules

Find out more

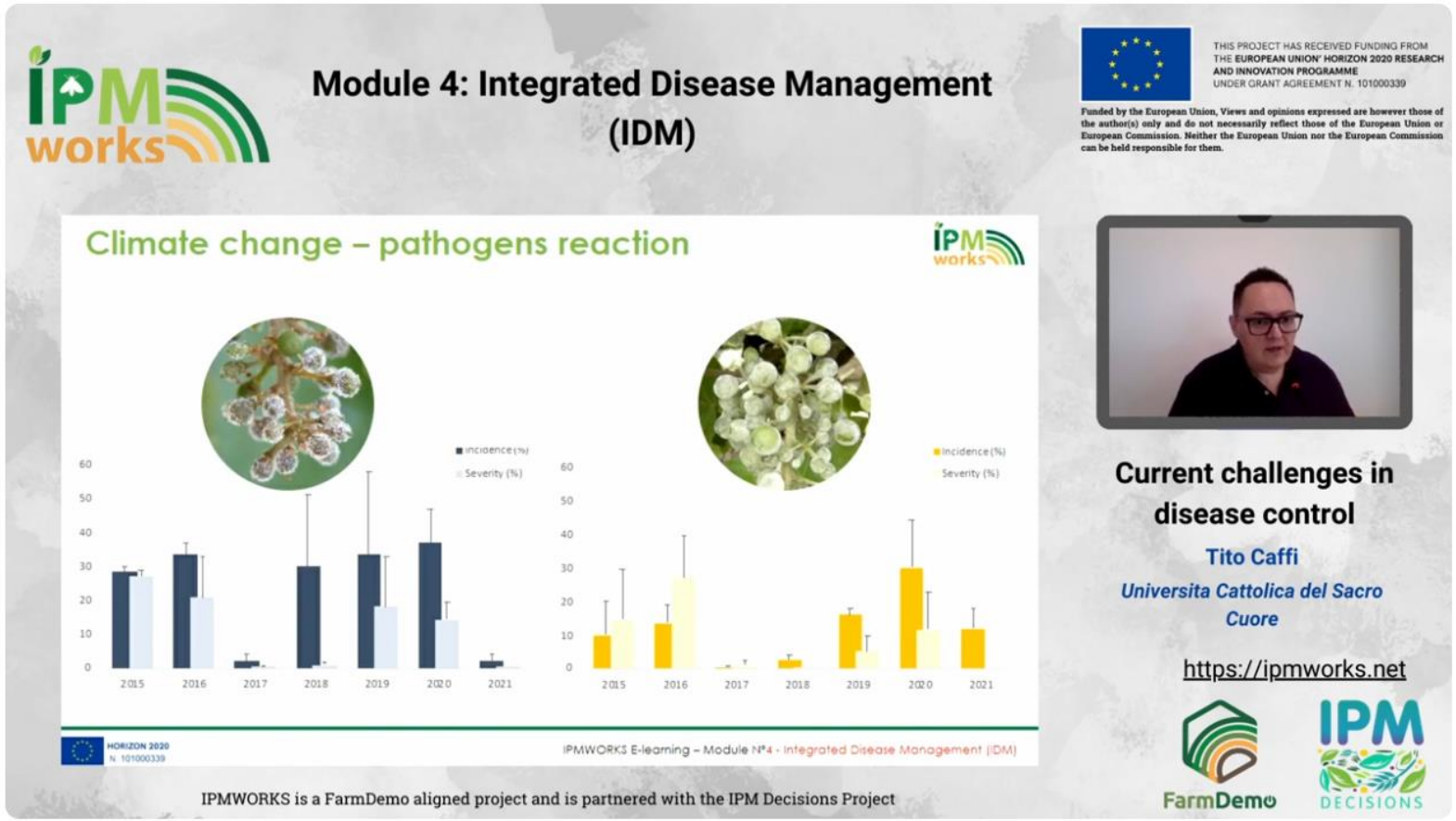
IPMWORKS E-learning 4.1.pdf

Sectors

Regions EU

Relevant pest(s)

Relevant crop(s) All



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IPMWORKS Dissemination channels

Social media

Sharing: News regarding demo events, vídeos, sharing dissemination materials & toolbox resources, related projects & initiatives

LinkedIn

893 followers

47 367 Impressions

270 posts

3 603 engagements

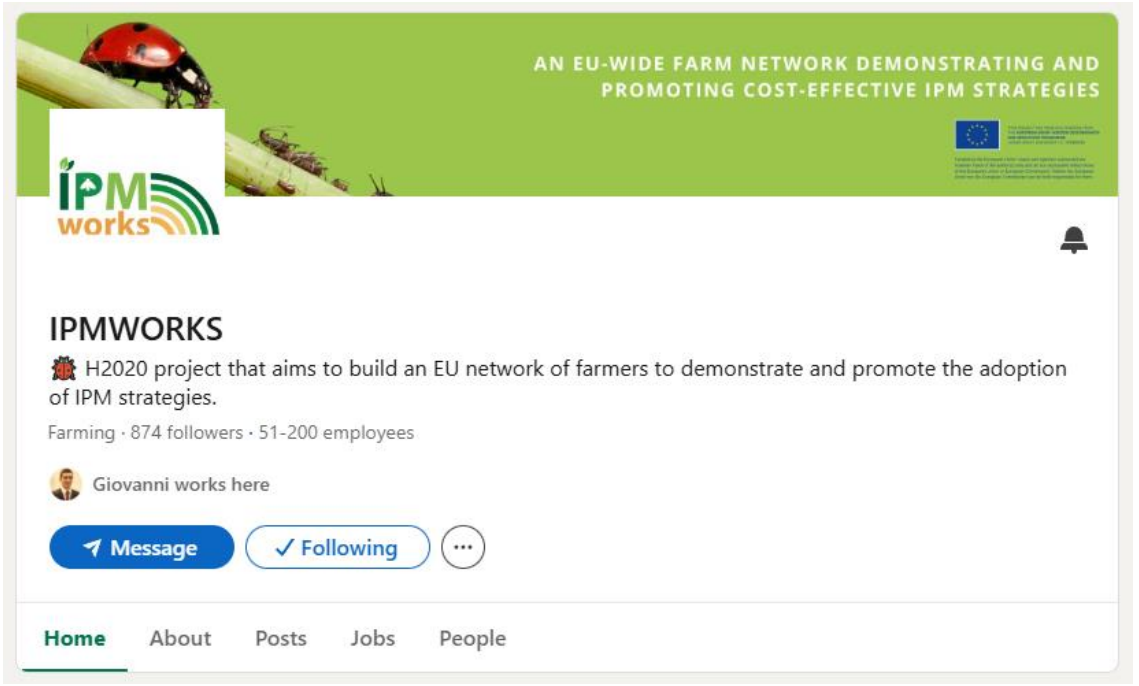
Twitter

411 followers

168 542 Impressions

270 posts

7 957 engagements



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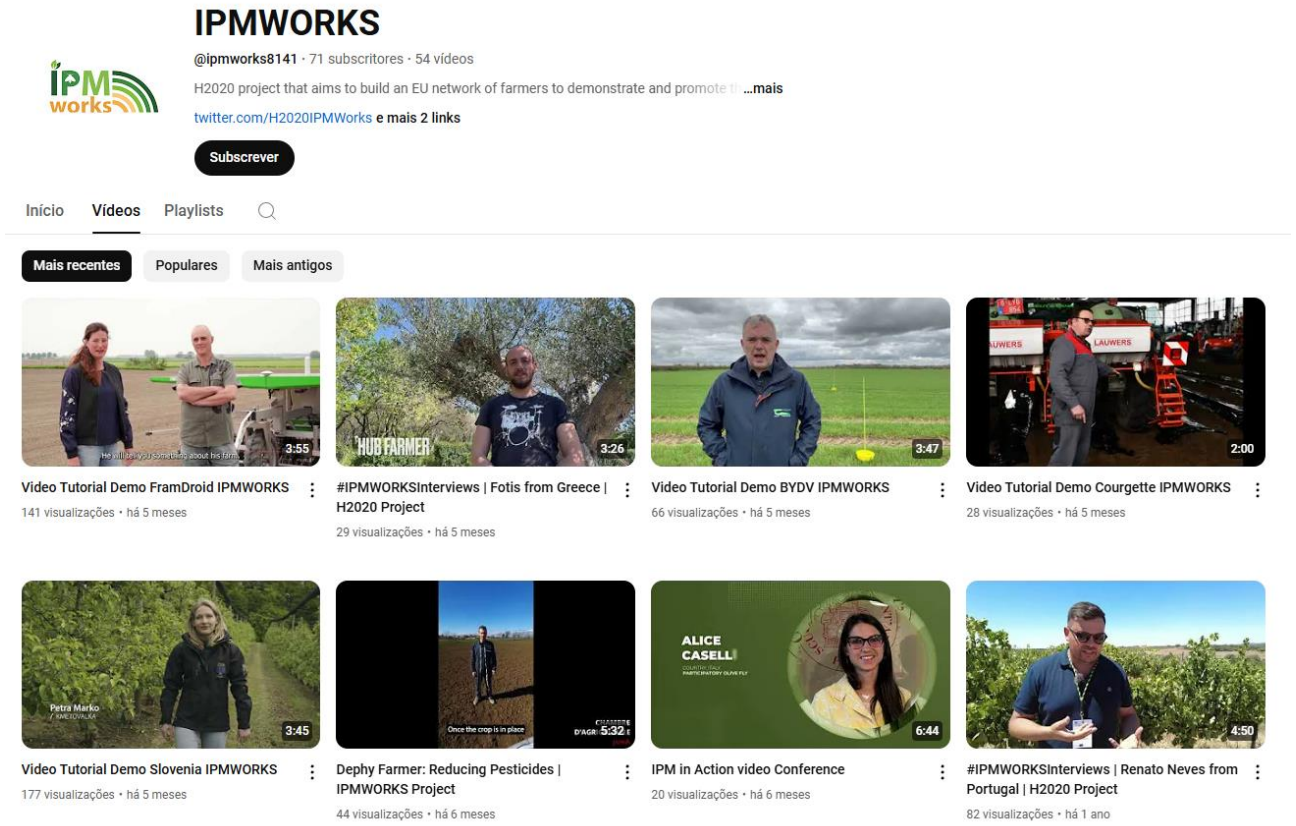
IPMWORKS Dissemination channels

Video materials



In total we have:

- 22 videos presenting Hub Coaches
- 5 videos - IPM in a minute
- 15 vídeos – IPMWORKS Interviews
- 46 vídeos – Training modules
- 14 vídeos – IPMWORKs Tutorials
- 5 other videos

Youtube

77 subscribers

7 000 views

92 400 impressions

61 videos

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IPM works

An EU-wide farm network demonstrating and promoting cost-effective IPM strategies

FINAL WEBINAR – 12 March 2025 – 14:00-17:00 CET

Do we still need IPM?

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THANK YOU!

Joaquín Balduque| CIHEAM Zaragoza | joaquin.balduque@iamz.ciheam.org

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The IPM Decisions platform: a unique resource for Decisions Support Systems dedicated to IPM

Mark Ramsden | ADAS

IPM DECISIONS

Co-funded by the Horizon 2020 Framework Programme of the European Union under grant agreement No 817617

Reducing pesticide use, without adverse impact on productivity and competitiveness, requires two steps:

Reducing the need for pesticides by integrating non-chemical control measures

Treating crops with pesticides according to the reduced need.

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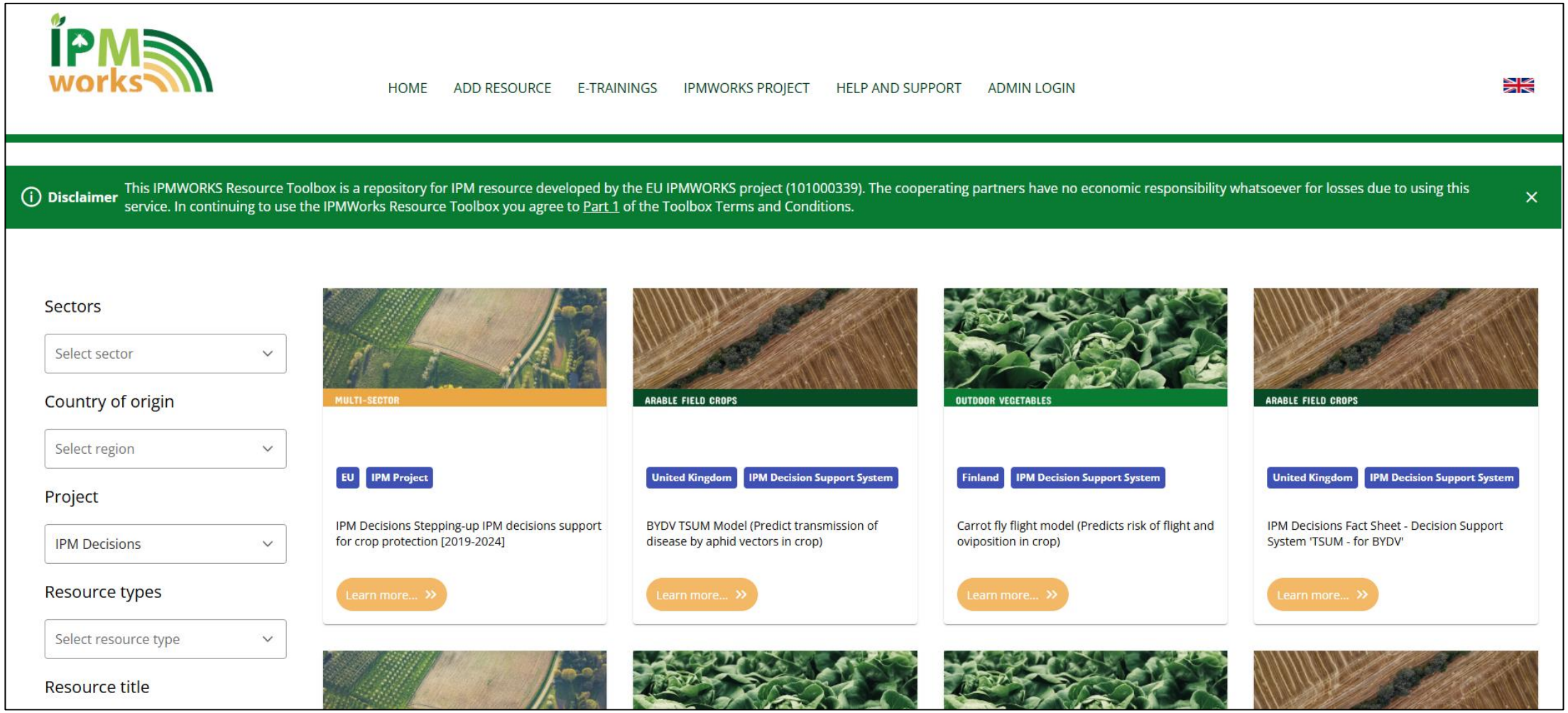
IPMWORKS and IPM Decisions



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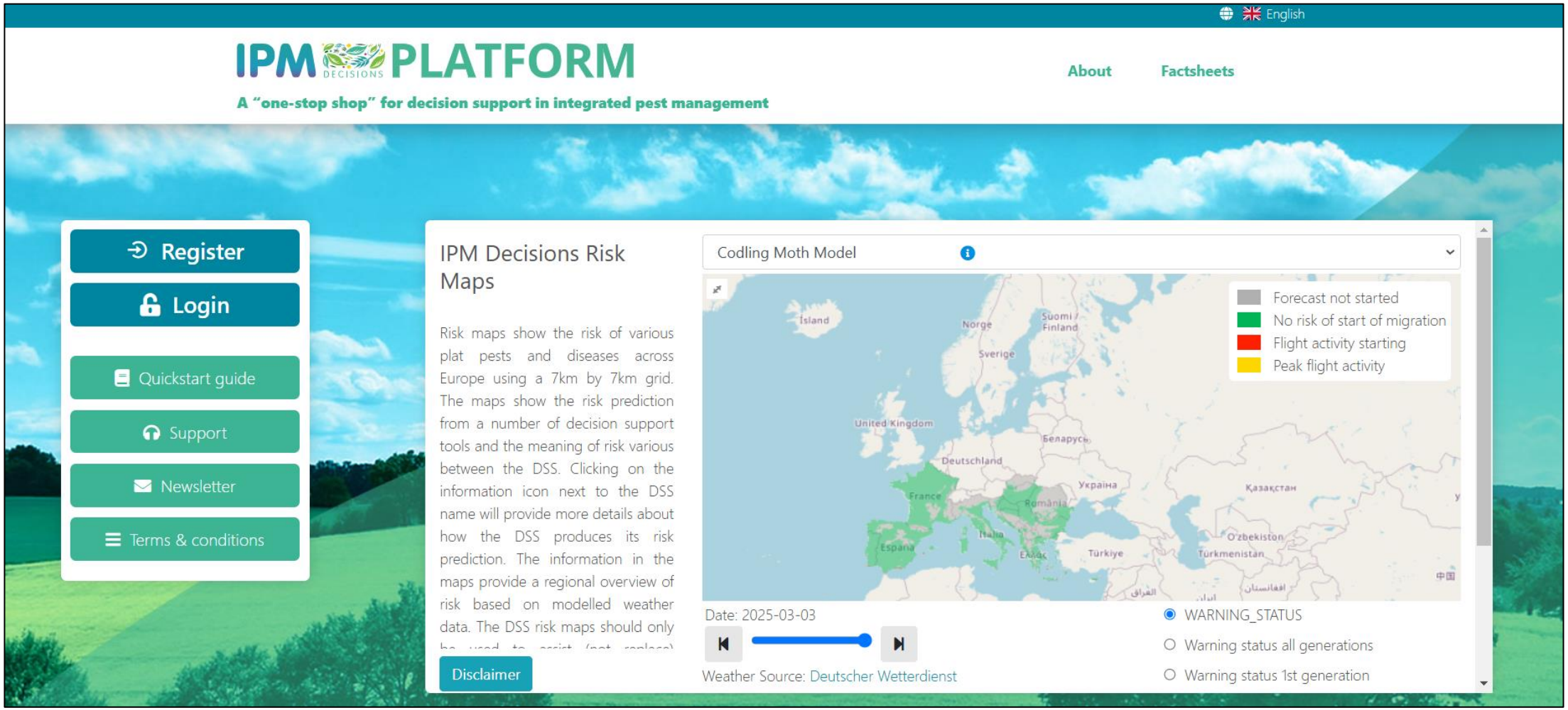
IPMWORKS and IPM Decisions



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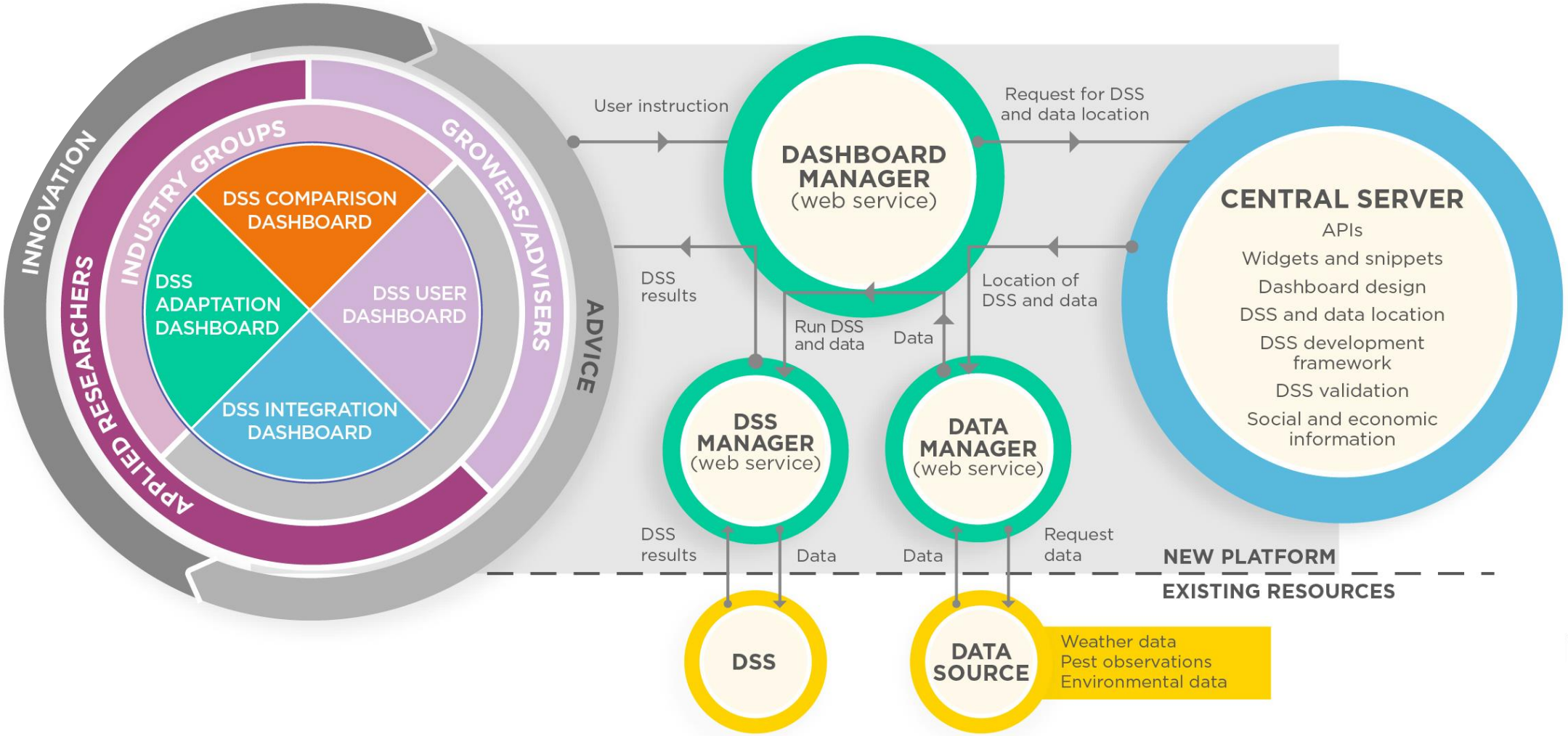
Overview of the IPM Decisions Platform



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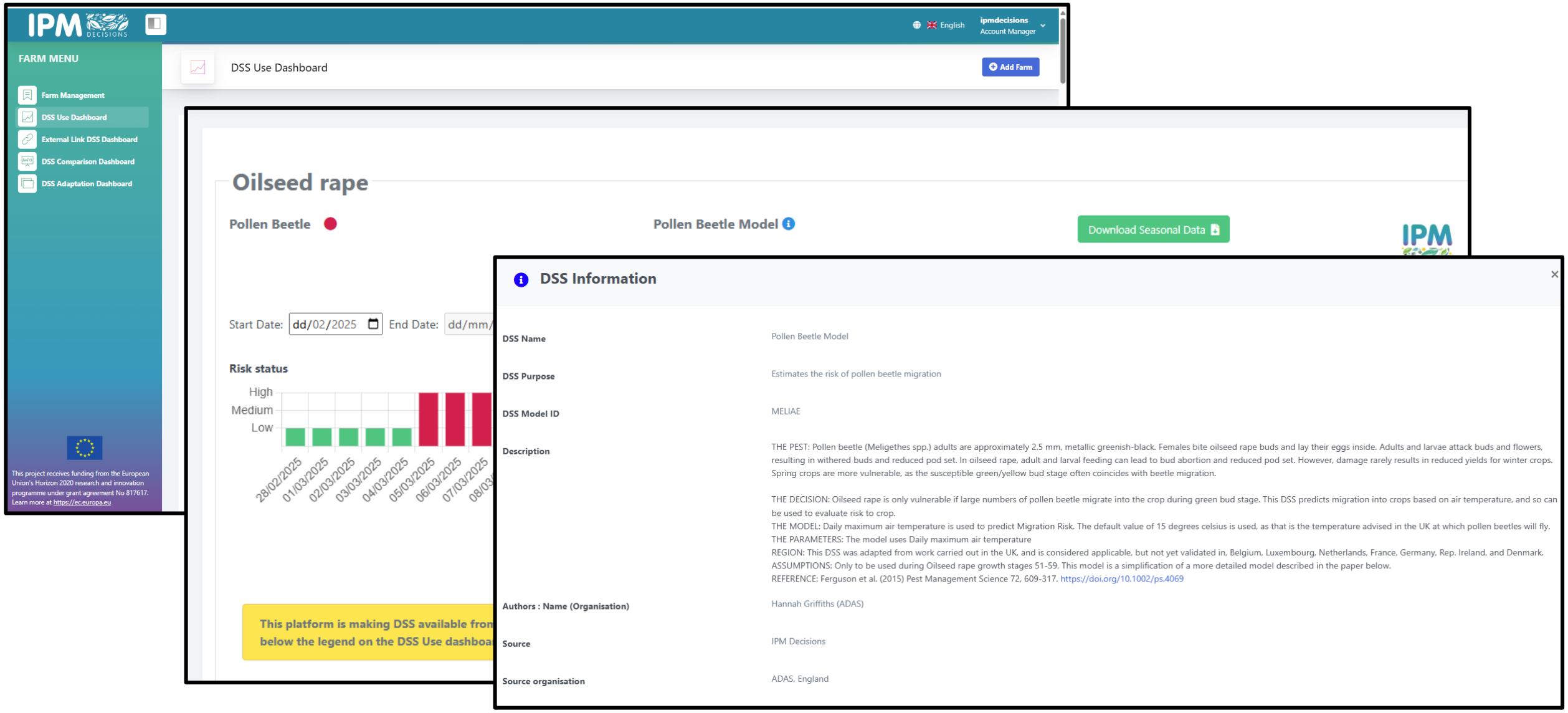
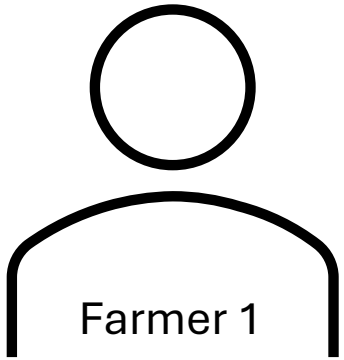


Take a look…

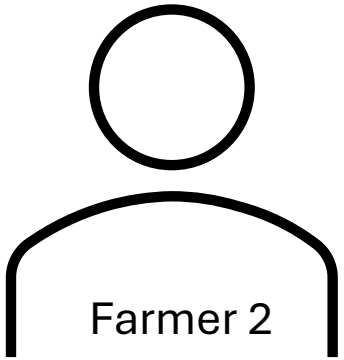
IPM DECISIONS

www.platform.ipmdecisions.net/login

Consulting the IPM Decisions platform



- Advanced, holistic IPM strategy
- Low use of pesticides
- Likes using technology
- Likes testing new ideas on farm
- Interested in novel approaches



- Limited IPM strategy
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- Wants to minimise risk
- Keen to reduce inputs – but not at the cost of yield

IPM DECISIONS

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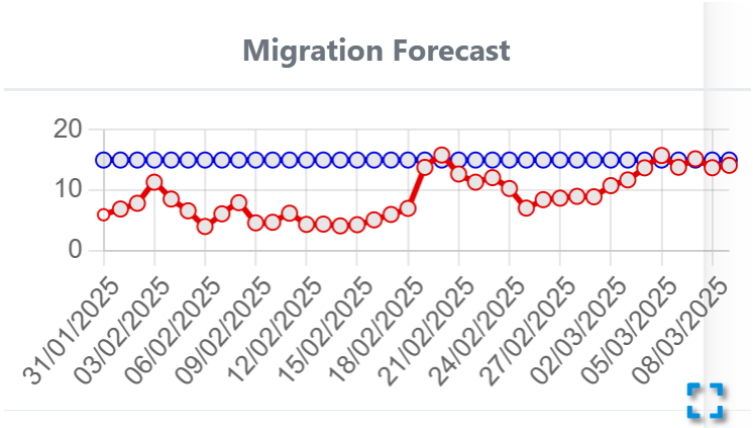
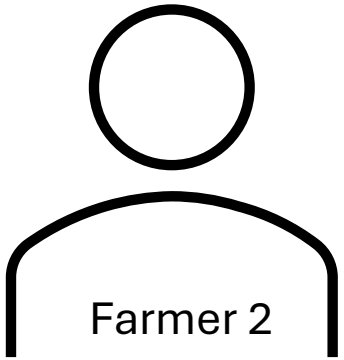
Consulting the IPM Decisions platform



Revised control thresholds for winter and spring oilseed rape	
If there are less than 30 plants/m²	the threshold is 25 pollen beetles per plant
If there are 30–50 plants/m²	the threshold is 18 pollen beetles per plant
If there are 50–70 plants/m²	the threshold is 11 pollen beetles per plant
If there are more than 70 plants/m²	the threshold is 7 pollen beetles per plant



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IPM DECISIONS

IPM works

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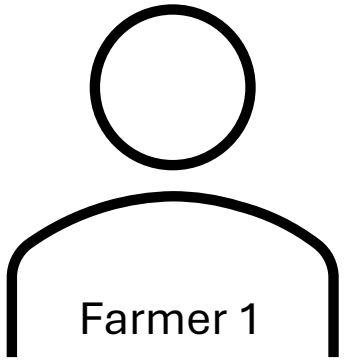
Consulting the IPM Decisions platform



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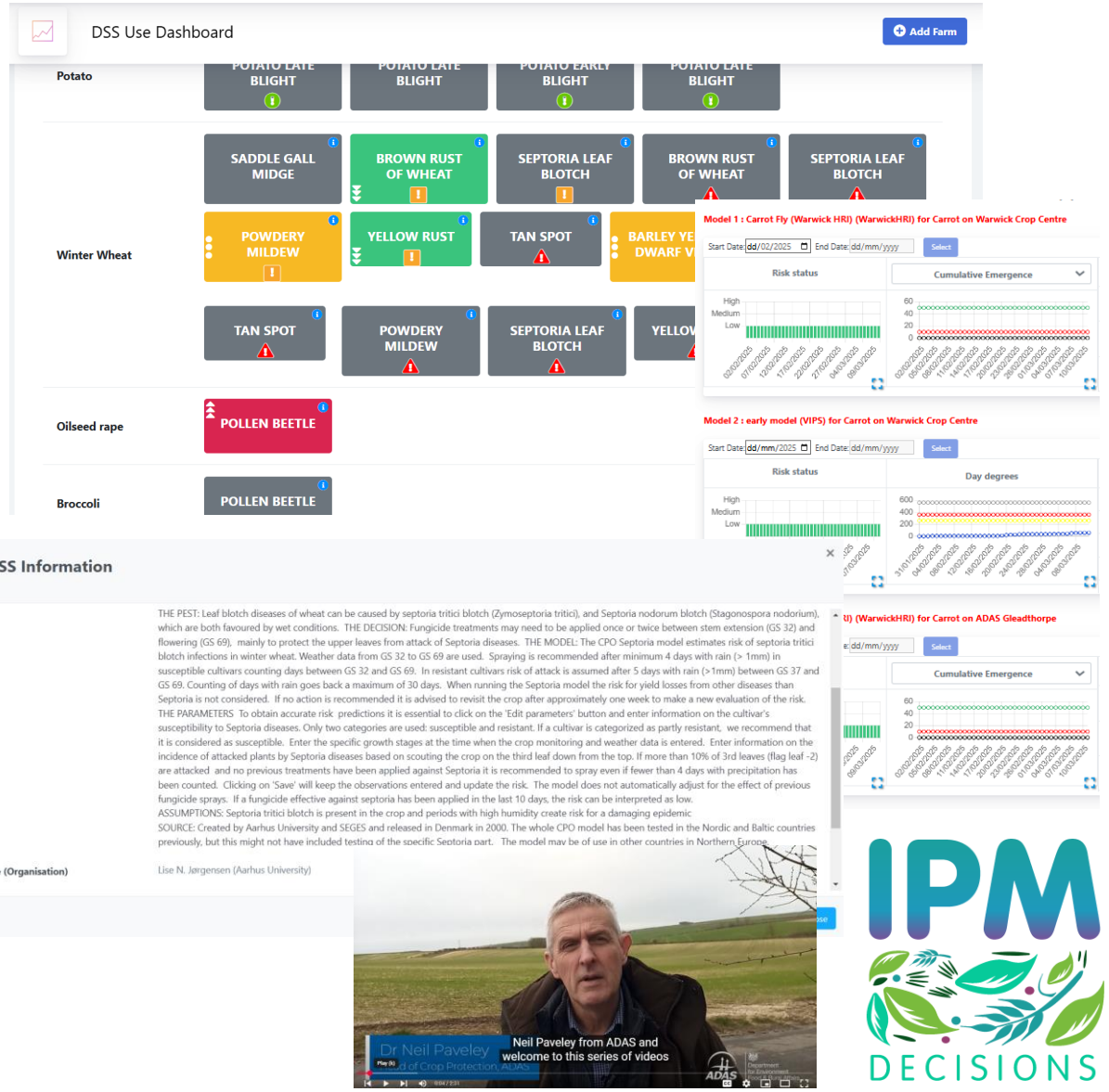

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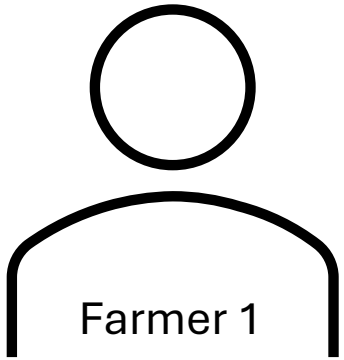
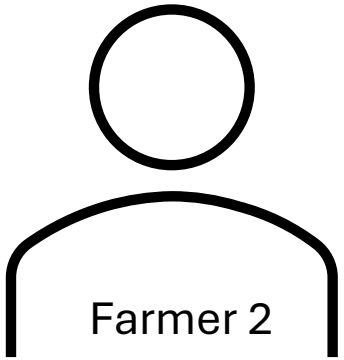
Consulting the IPM Decisions platform





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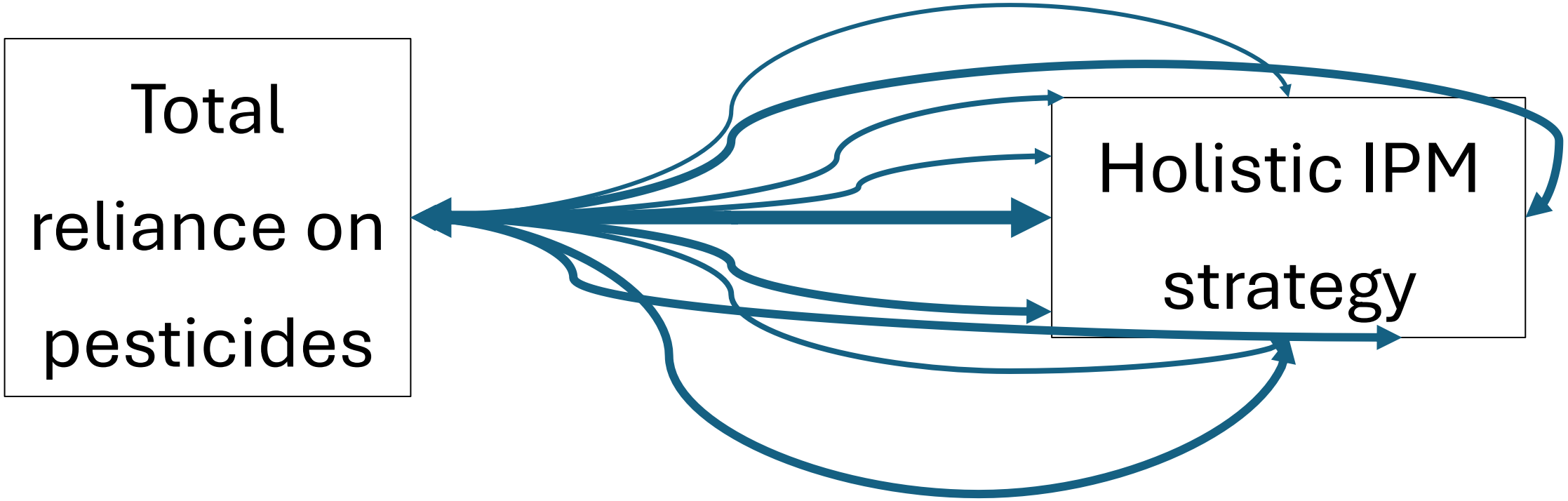
Integrated Pest Management Tools



Boosting IPM through Decision Support Systems (DSS)

Access to IPM DSS

- Support research and development of novel IPM DSS

Validation of IPM DSS

- Address technological and socioeconomic barriers to farmers and advisors IPM DSS consultation

Demonstration of IPM DSS

- Support wider demonstration of IPM DSS in practice to farmers and advisors

Further reading

Home › European Journal of Plant Pathology › Article

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Overcoming Barriers to the Adoption of Decision Support Systems in Integrated Pest Management in Some European Countries

by Jurij Marinko [1,2,*], Vladimir Kuzmanovski [2], Mark Ramsden [3] and Marko Debeljak [1,2]

[1] Jožef Stefan International Postgraduate School, SI-1000 Ljubljana, Slovenia
[2] Department of Knowledge Technologies, Jožef Stefan Institute, SI-1000 Ljubljana, Slovenia
[3] RSK ADAS Ltd., Cambridge WA6 0AR, UK
* Author to whom correspondence should be addressed.

Agronomy **2025**, *15*(2), 426; **https://doi.org/10.3390/agronomy15020426**

Submission received: 20 December 2024 / Revised: 24 January 2025 / Accepted: 29 January 2025 / Published: 8 February 2025

(This article belongs to the Section **Pest and Disease Management**)

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Abstract

Decision support systems (DSSs) can improve decision making in integrated pest management (IPM), but are still underutilised despite proven environmental and economic benefits. To overcome the barriers to DSS adoption, this

IPM DECISIONS

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Publication links

Jørgensen, L.N., et al. (2020) Validation of risk models for control of leaf blotch diseases in wheat in the Nordic and Baltic countries. European Journal of Plant Pathology, 157, 599-613

Midingoyi C.A., et al. (2020) Reuse of process-based models: automatic transformation into many programming languages and simulation platforms. In silico Plants, 2(1)

Holst N. (2020) Mathematical models. In: Chantre G.R. & González-Andujar J.L. eds. Decision Support Systems for Weed Management. Berlin, Springer Verlag, 3-23

Andersson, B., et al. (2022) Comparison of models for leaf blotch disease management in wheat based on historical yield weather data in the Nordic-Baltic region. Agronomy for Sustainable Development 42-44

Jørgensen, L. N. et al. (2021) Using risk models for control of leaf blotch diseases in barley minimises fungicide use – experiences from the Nordic and Baltic countries. Acta Agriculturae Scandinavica, Section B — Soil & Plant Science 71:247-260

Jalli, M, et al. (2020) Yield increases due to fungicide control of leaf blotch diseases in wheat and barley as a basis for IPM decision-making in the Nordic-Baltic region. European Journal of Plant Pathology

Ramsden, M. and O'Driscol A. (2022) Advances in decision support systems (DSS) for integrated pest management in horticultural crops. In book: Improving integrated pest management in horticulture.

Ramsden, M., et al. (2023) Advances in pest risk assessment techniques focusing on invertebrate pests of European outdoor crops. In book: Advances in monitoring of native and invasive insect pests of crops.

Leybourne D., et al. (2023) Online decision support systems, remote sensing and artificial intelligence applications for wheat pest management. In book: Advances in understanding insect pests affecting wheat and other cereals

Levionnois S., et al. (2023) Modelling the impact of proportion, sowing date, and architectural traits of a companion crop on foliar fungal pathogens of wheat in crop mixtures. Phytopathology.

Marinko J., et al. (2023) Incentives and barriers to adoption of decision support systems in integrated pest management among farmers and farm advisors in Europe. International Journal of pest Management

Midingoyi, C.A., et al. (2023) Crop modeling frameworks interoperability through bidirectional source code transformation. Environment Modelling & Software

Akbarinia R. et al (2023) Life Science Workflow Services (LifeSWS): motivations and architecture, Transactions on Large-Scale Data- and Knowledge-Centered Systems, 14280, pp.1-24.

Marinko, J., et al. (2024) Typology for Decision Support Systems in Integrated Pest Management and Its Implementation as a Web Application. Agronomy

Akaka JJ, García-Gallego A, Georgantzis N et al. Decision Support Systems adoption in pesticide management [version 1; peer review: 2 approved with reservations]. Open Res Europe 2024, 4:142

Helps J. et al (2024) A framework for evaluating the value of agricultural pest management decision support systems.

Software links

IPM Decisions Platform - https://www.platform.ipmdecisions.net/

- IPM Decisions GitHub: https://github.com/H2020-IPM-Decisions
- Weather service source code: https://github.com/H2020-IPM-Decisions/DSSService
- DSS Service source code: https://github.com/H2020-IPM-Decisions/WeatherService
- DSS MetaData File editor: https://ipmdecisions.nibio.no/editmetadata/

IPM Decisions DSS Factory

- Install OpenAlea https://github.com/openalea
- Install Visualea and dependencies https://github.com/openalea/visualea
- Example https://github.com/H2020-IPM-openalea/DSS/blob/dss_integration_tutorial/example/model_integration.ipynb

IPM Advisor Tool: https://ipmadviser.ijs.si/

IPMWORKS Toolbox: https://ipmworks.net/toolbox/en/#/

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THANK YOU!

Mark Ramsden| ADAS | ipmdecisions@adas.co.uk

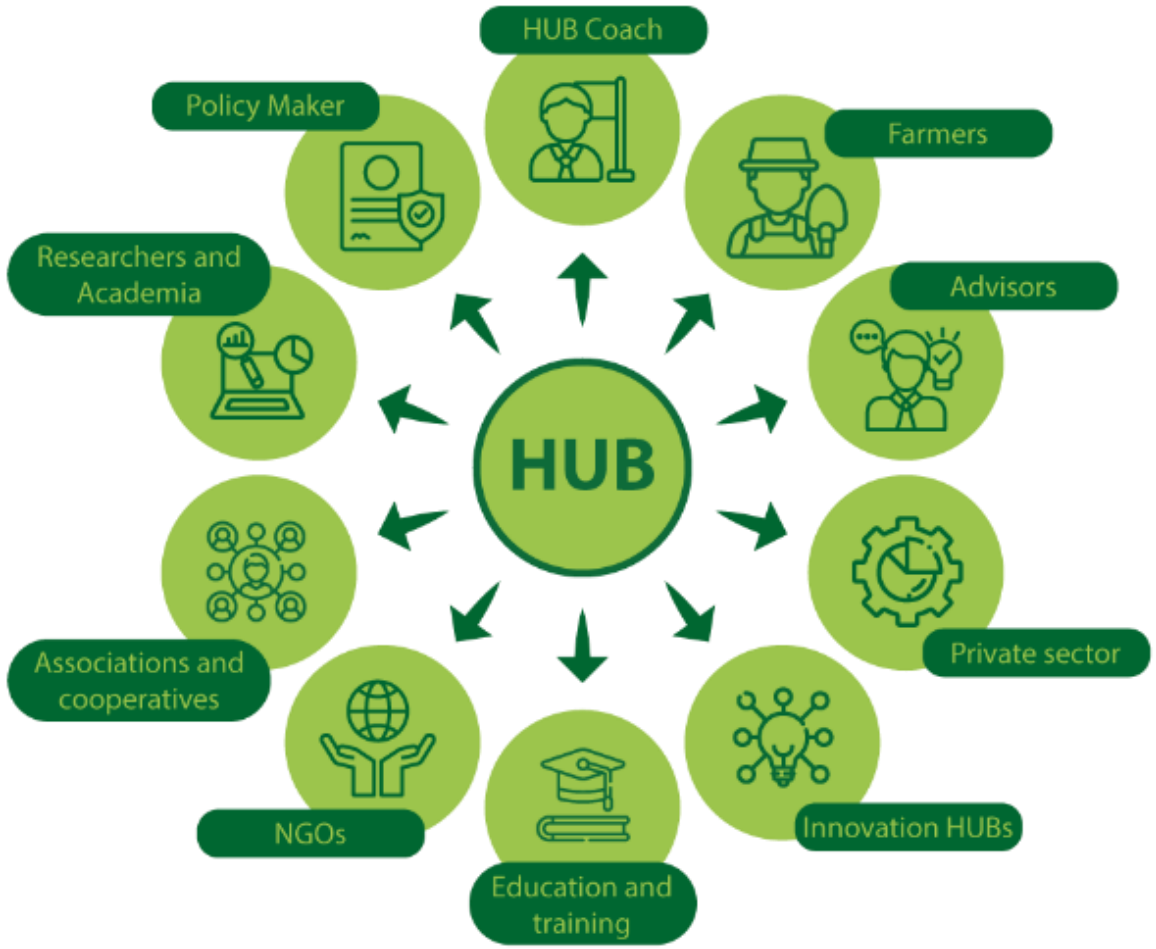
Recommendations for successful exploitation of IPM networks to scale IPM adoption

FarmDemo

Areas of recommendations

- The HUB and the HUB coach
- Supporting connectivity among actors
- Effective facilitation
- Encourage communication and participation
- IPM demonstration events
- Address political and cultural considerations
- Training and education

The HUB and Hub coach



Effective formation of IPM demo HUBS

- **Create a strong community:** **Regular meetings** with neighboring IPM actors foster knowledge sharing, problem-solving and social support, leading to stronger farming community through collaboration.
- **Ensuring HUB sustainability:** Focus on **long-term goals, consistent event themes, and clear development pathways** while adapting to members' needs for skill enhancement and effective IPM promotion.
- **Boosting IPM adoption:** Highlight the long-term environmental benefits of IPM, acknowledge farmers' efforts, and leverage their **growing awareness of sustainability to encourage adoption**.

Supporting good connectivity

- **Personal and direct communication:** **Establishing personal one-on-one communication** with farmers and HUB members can build trust, provide a safe space for sharing challenges, and tailor support to their needs.

- **Reaching local networks:** **Integrate existing local and regional farmer groups into the network** to leverage their experience and connections, enhancing the impact and reach of sustainable agricultural practices without needing to increase the number of events.

- **Build relations with advisory services, private sector and other projects:** **Leverage agricultural advisors and companies involved in IPM sector within the HUB network** for their **technical expertise** and valuable role as trusted links between farmers and sectoral actors, enhancing support and confidence in best practices.

Supporting good connectivity

Cross-country and cross-sectoral events: Organize cross-country events for farmers with **similar crops, climates, or soils to facilitate valuable knowledge exchange, showcase diverse problem-solving approaches, and strengthen international networks,** while addressing broad agricultural issues to promote open sharing and reduce competition.

Effective facilitation

- Being a moderator more than a leader
- Use proper language and good translations
- Developing audiovisual materials
- Frequent communication with network members
- Continuous mentoring
- Surveys and polls

Communication and participation

- Culture of dialogue
- Knowledge exchange
- Collaborative planning process
- Provide solid information
- Encourage participation
- Suitable locations
- Create a safe space
- Facilitation tools and methods

IPM demo-events

How to run a successful demonstration event: Prepare and manage demo events with a **strategic plan**, including goals, location, audience and IPM strategies, to effectively showcase IPM practices and maintain flexibility for adapting to changes and **ensuring stakeholder engagement.**

- **Preparation**
- **Content definition**
- **Encourage interactions**
- **Advertise the event**
- **Involve rigth actors**
- **Share Good practices and successful IPM stories**
- **Timing**
- **IPM approach to demo-events**

Addressing external factors

- **Approaching political aspects and economic concerns:** Recommend advocating for regional or local government support to mitigate production loss from IPM measures, providing tailored advice based on crop type and conditions and organizing dedicated events to share and clarify funding and regulatory information with farmers.

- **Cultural considerations Personal and direct communication:** Facilitators should understand local cultural nuances to engage farmers effectively, address collaboration barriers, and leverage younger farmers' openness to new practices.

Training and education

- **Addressing the education gap in IPM:** To address the IPM knowledge gap, integrate IPM-focused content into agronomy and agricultural training programs.

- **Engagement of agri-food chains and consumers:** To advance IPM adoption, all food chain stakeholders must engage in education and advocacy, sharing the responsibility for promoting sustainable pest management.

- **Capacity building programs:** Engagement in training initiatives is crucial for gaining expertise in IPM practices and enhances facilitators' ability to manage stakeholder groups effectively, fostering collaboration and continuous learning in agriculture.

- **Bringing technology and innovation close:** Integrating digital and technical skills into IPM training programs, leveraging online platforms for outreach, and embracing innovative technologies in crop management are crucial for effective implementation and dissemination of IPM measures.

IPM works

An EU-wide farm network demonstrating and promoting cost-effective IPM strategies

Final webinar – 12 March 2025 – 14:00-16:30 CET

Do we still need IPM?

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Rebeca Díez Barca – rdiez@feuga.es

FarmDemo

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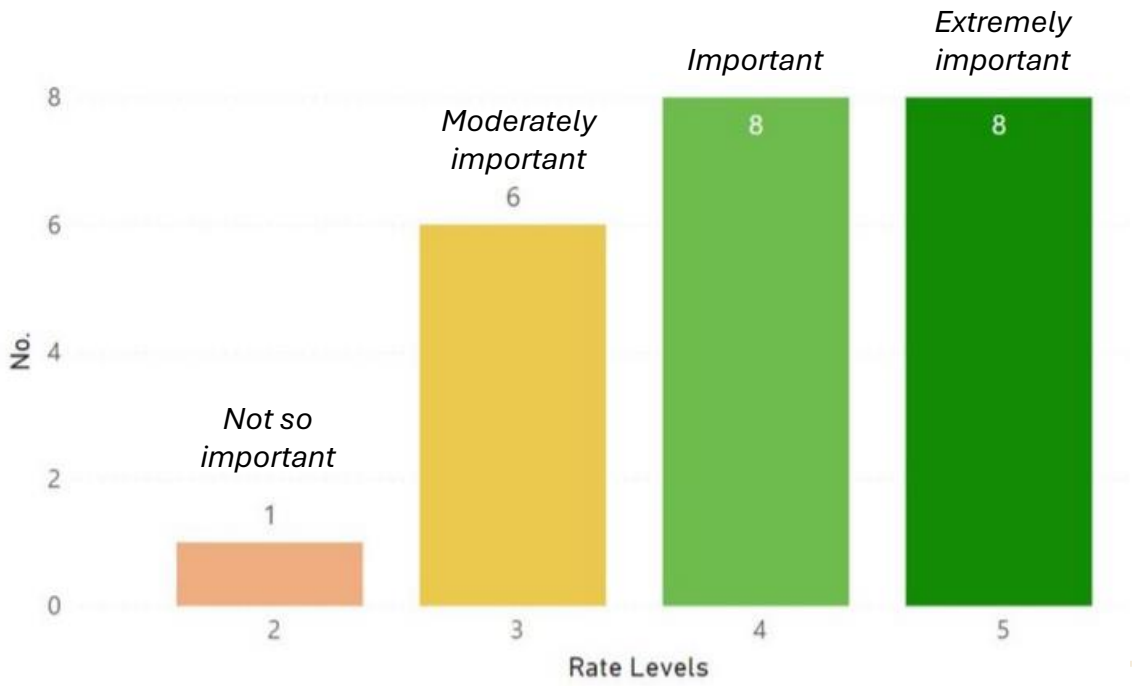
The foreseen future of IPMWORKS

Nicolas Munier-Jolain | INRAE | Coordinator

Continuation & expansion of IPM*WORKS* Nicolas Munier-Jolain

- IPM*WORKS* 2020-2024 : the proof-of-concept
- **Target for medium term**
  ≈ 300 Hubs, ≈ 4.000 farmers throughout Europe
  22 hubs + 5 national networks + new welcomed hubs (including launched from other initiatives)



Question to IPMWORKS Hub Coaches
How important is it to have a European network to continue the work undertaken by IPMWORKS?

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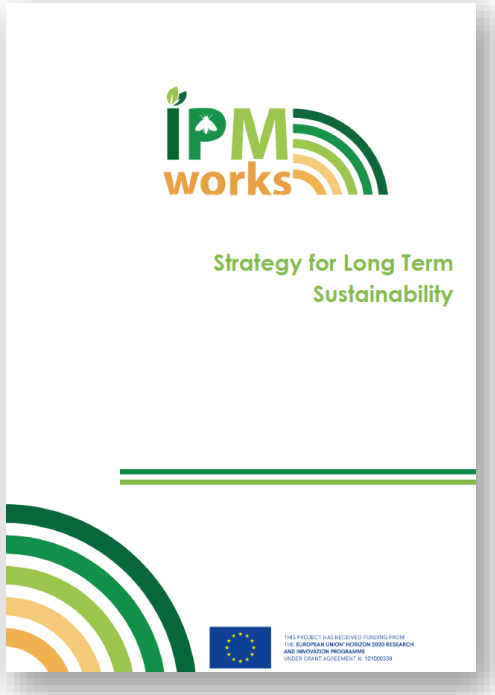
Continuation & expansion of IPM*WORKS* Nicolas Munier-Jolain



https://ipmworks.net/category/public-deliverables/

- IPM*WORKS* 2020-2024 : the proof-of-concept
- **Target for medium term**
  ≈ 300 Hubs, ≈ 4.000 farmers throughout Europe
  22 hubs + 5 national networks + new welcomed hubs (including launched from other initiatives)

- ‘Self-funding’ of each Hub
  Budget : adviser half-time, travel, functioning, rewards to farmers
  Attract CAP funding dedicated to Farm Demo whenever possible !
- A EU budget for the coordination of the network
  Working plan, capacity building, peer-to-peer knowledge exchange, communication, data collection, data analysis

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THANK YOU!

Nicolas Munier-Jolain| INRAE | nicolas.munier-jolain@inrae.fr

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Questions & Answers

Facilitation : Calypso Picaud (CA Occitanie)

Use the Q&A button to ask questions, and to vote for your preferred questions (the most voted questions will be asked first !)

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Short Break

Sessions 2 – Interactive Workshop – starts at 16:00 CET

Facilitation : Joaquin Balduque (CIHEAM Zaragoza)