



THIS PROJECT HAS RECEIVED FUNDING FROM
THE EUROPEAN UNION' HORIZON 2020 RESEARCH
AND INNOVATION PROGRAMME
UNDER GRANT AGREEMENT N. 101000339

IPM works OUTDOOR VEGETABLES

*Survey #1: IPM awareness, IPM adoption,
pesticide use and self-evaluation*



TOPICS OF SURVEY #1:



FARMING CONTEXT



FARMERS EXPECTATIONS AND PREFERENCES



CULTURAL PRACTICES: FARM LEVEL



CULTURAL PRACTICES: CROP LEVEL



PEST CONTROL EFFICACY: PERCEPTION OF THE FARMER



COST-EFFICIENCY-PERCEPTION OF THE FARMER: SELF-EVALUATION



NUMBER OF FARMS

38



AVERAGE FARM SIZE

179ha



PARTICIPATING COUNTRIES

BELGIUM

FINLAND

PORTUGAL

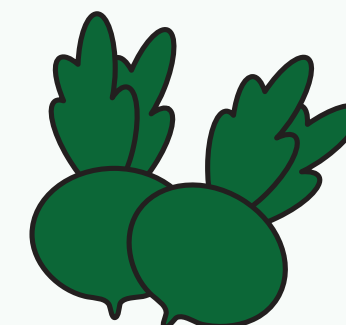
SERBIA

THE NETHERLANDS



TOTAL ORGANIC FARMS

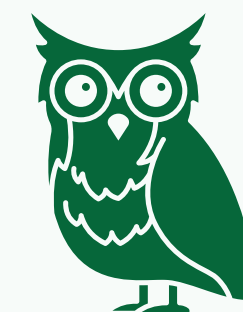
6



MAIN CROPS

TOMATO

POTATOES



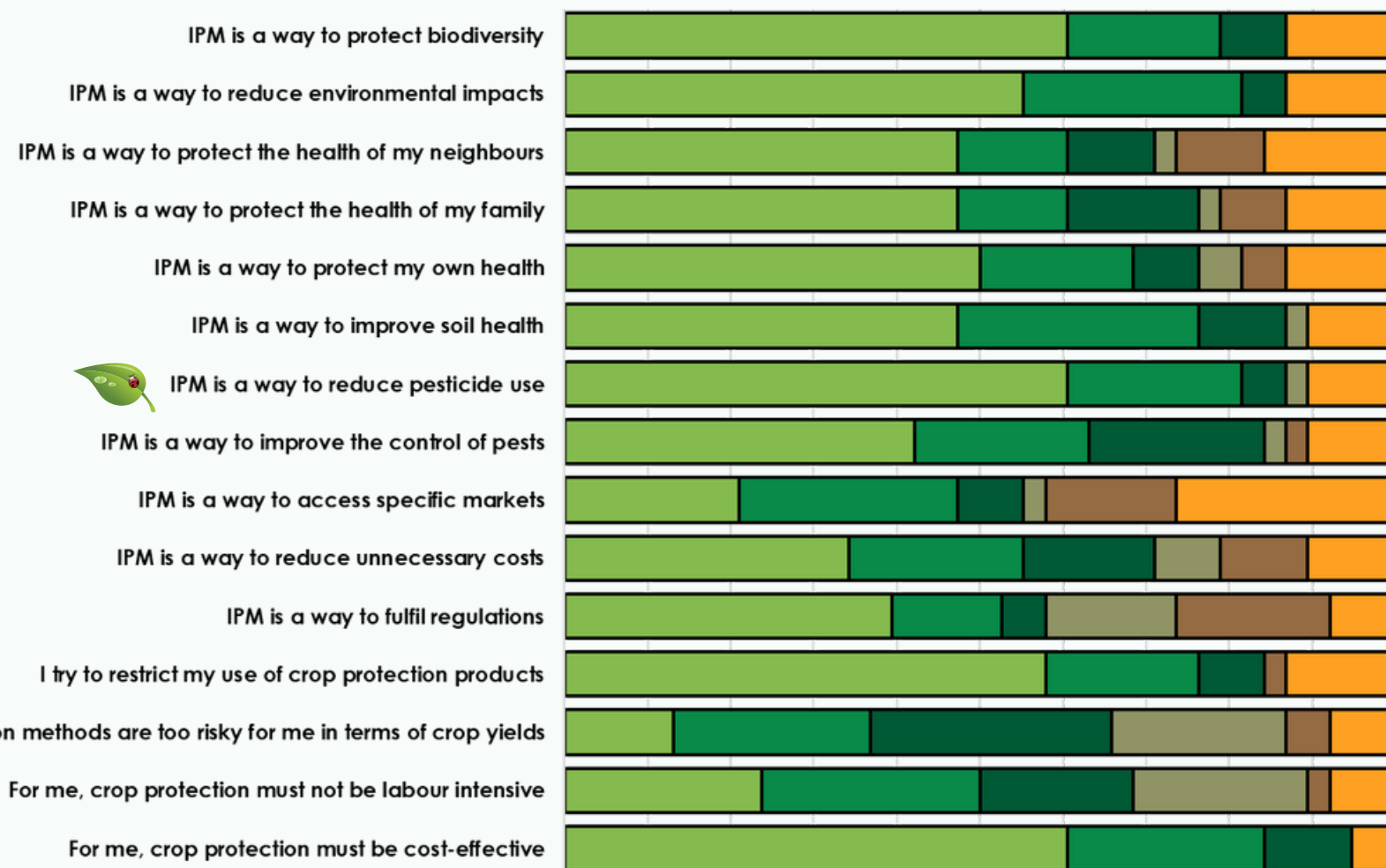
AVERAGE EXPERIENCE OF FARMERS

21 YEARS

Farmers' Awareness of IPM and Motivations

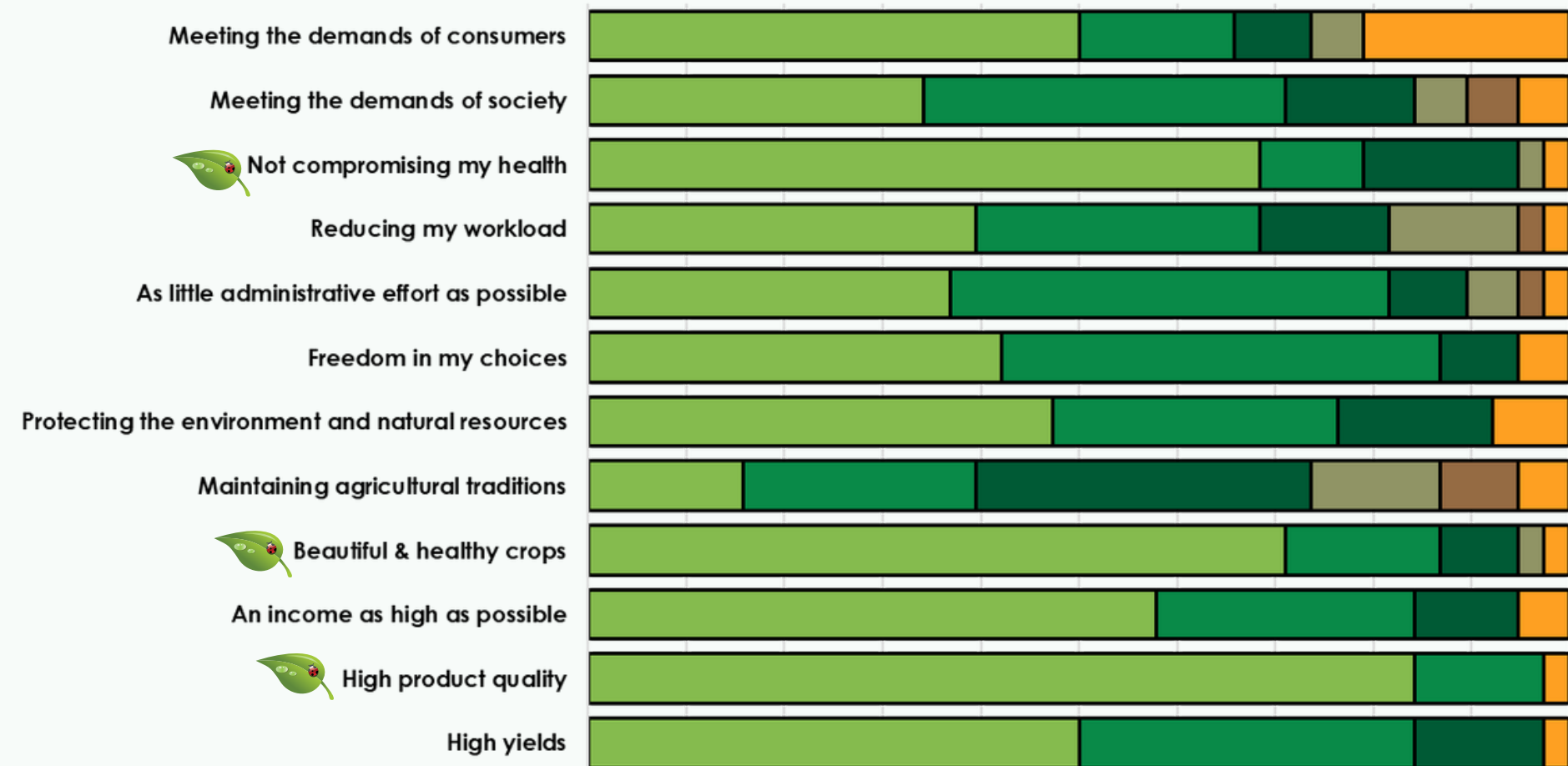
Rating statements from not "Fully true" to "Not at all true" or "Very important" to "Not at all important".

OBJECTIVES



1-Fully true 2-Rather true 3-Intermediate 4-Not really true 5-Not at all true 6-NA - Don't know

MOTIVATIONS

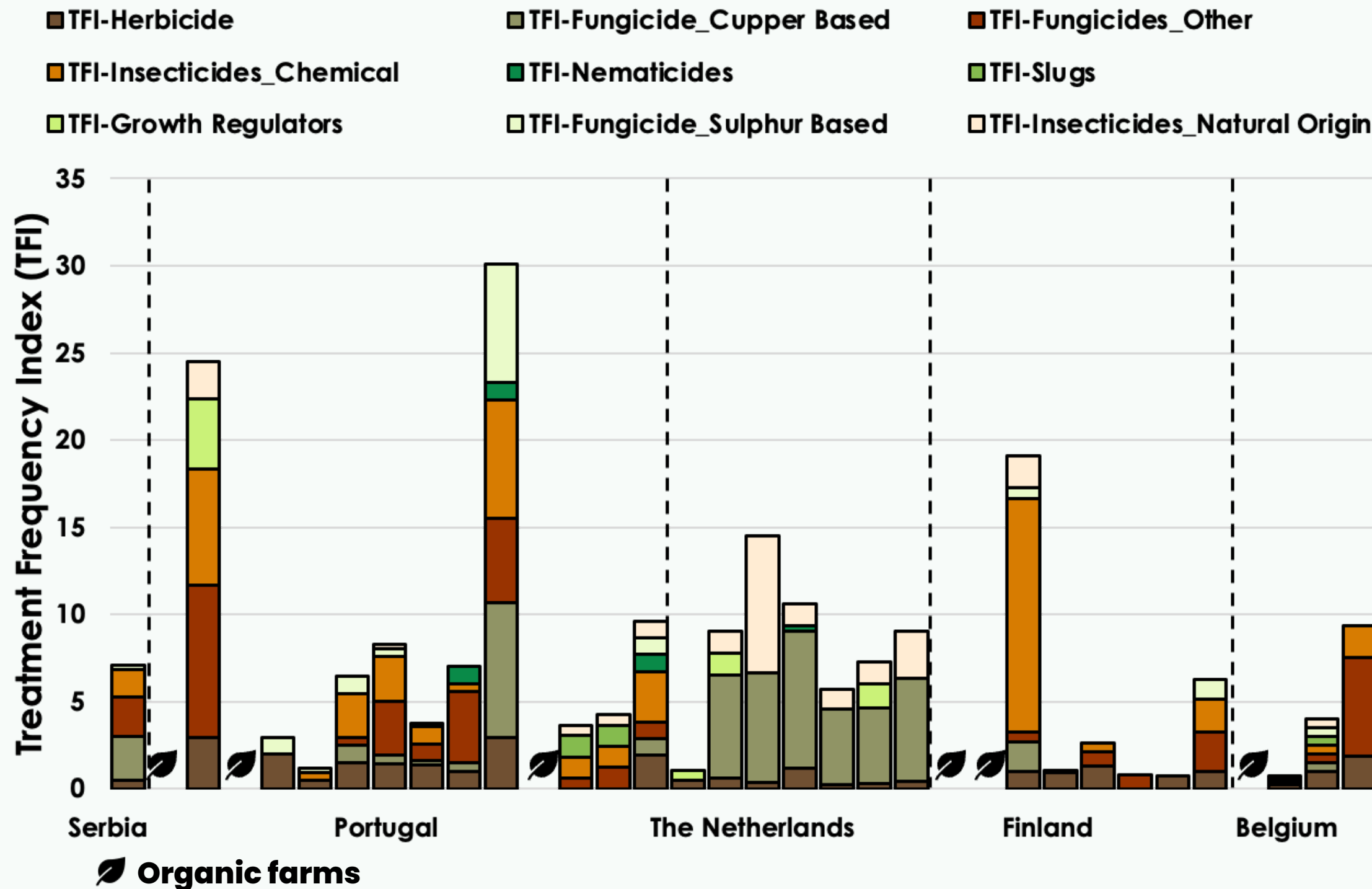


1-Very important 2-Rather important 3-Intermediate 4-Not really important 5-Not at all important 6-NA - Don't know

"IPM is a way to reduce pesticide use", "Not Compromising my health", Beautiful & healthy crops", and "High product quality" are considered to be the most important statements for successful IPM adoption. Protecting the environment, natural resources, and biodiversity is a very important factor influencing farmers' decision to implement IPM.



Pesticide Use



High-impact chemical pesticides are shown in dark colours at the bottom.
Low-impact natural pesticides are shown in light colours at the top.

Treatment Frequency Index (TFI)

TFI is used as a metric of frequency and intensity of pesticide use.

The TFI was determined based on:

- the number of treatments
- average dose (% recommended dose for target pest)
- average % of treated area (default = 100)

TFI metric shows a large range of pesticide use across farms, that can be attributed to:

- **Nature of crops**
- **Level of IPM adoption**

Integrated Pest Management Index



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

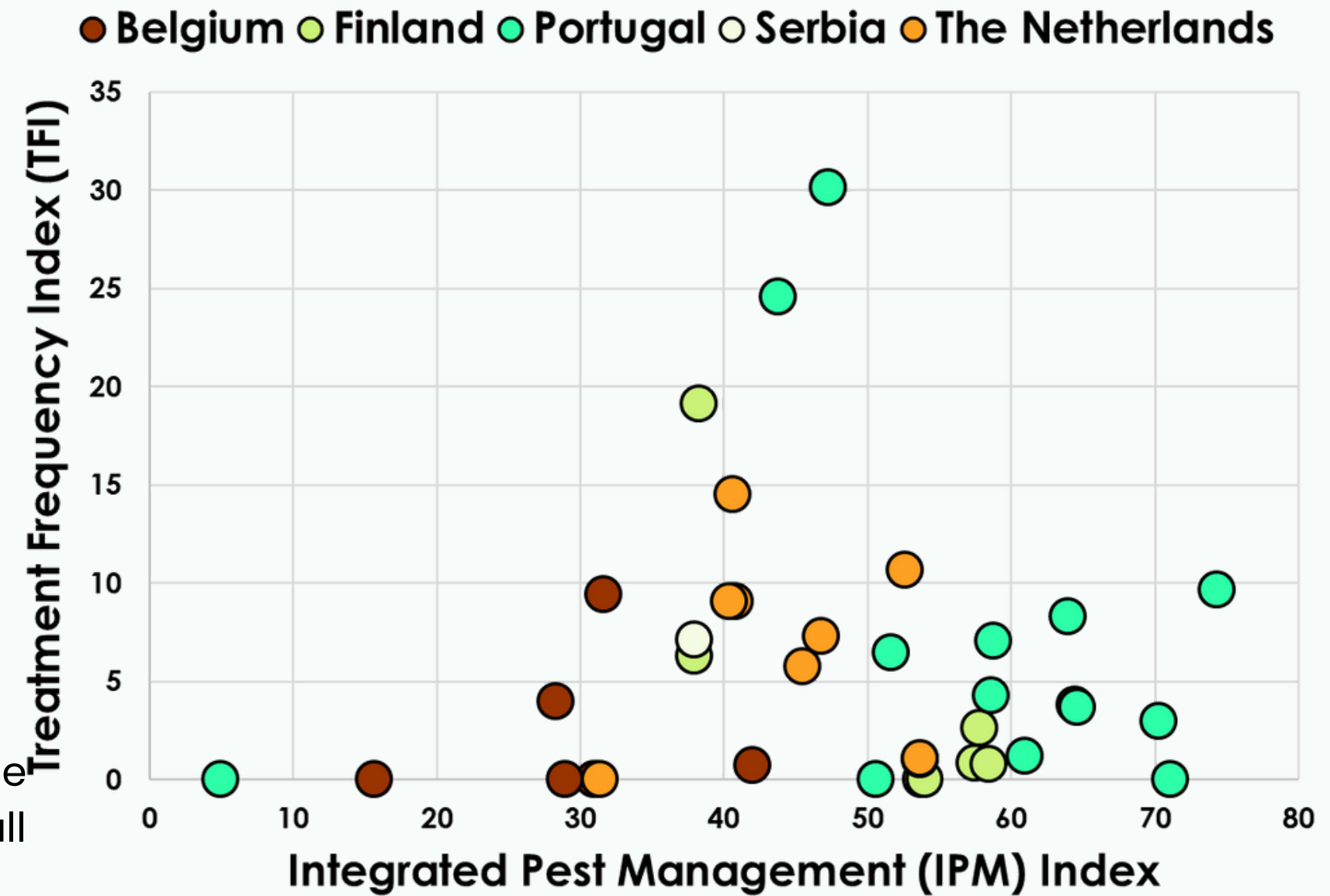


Topics included in IPM Index:

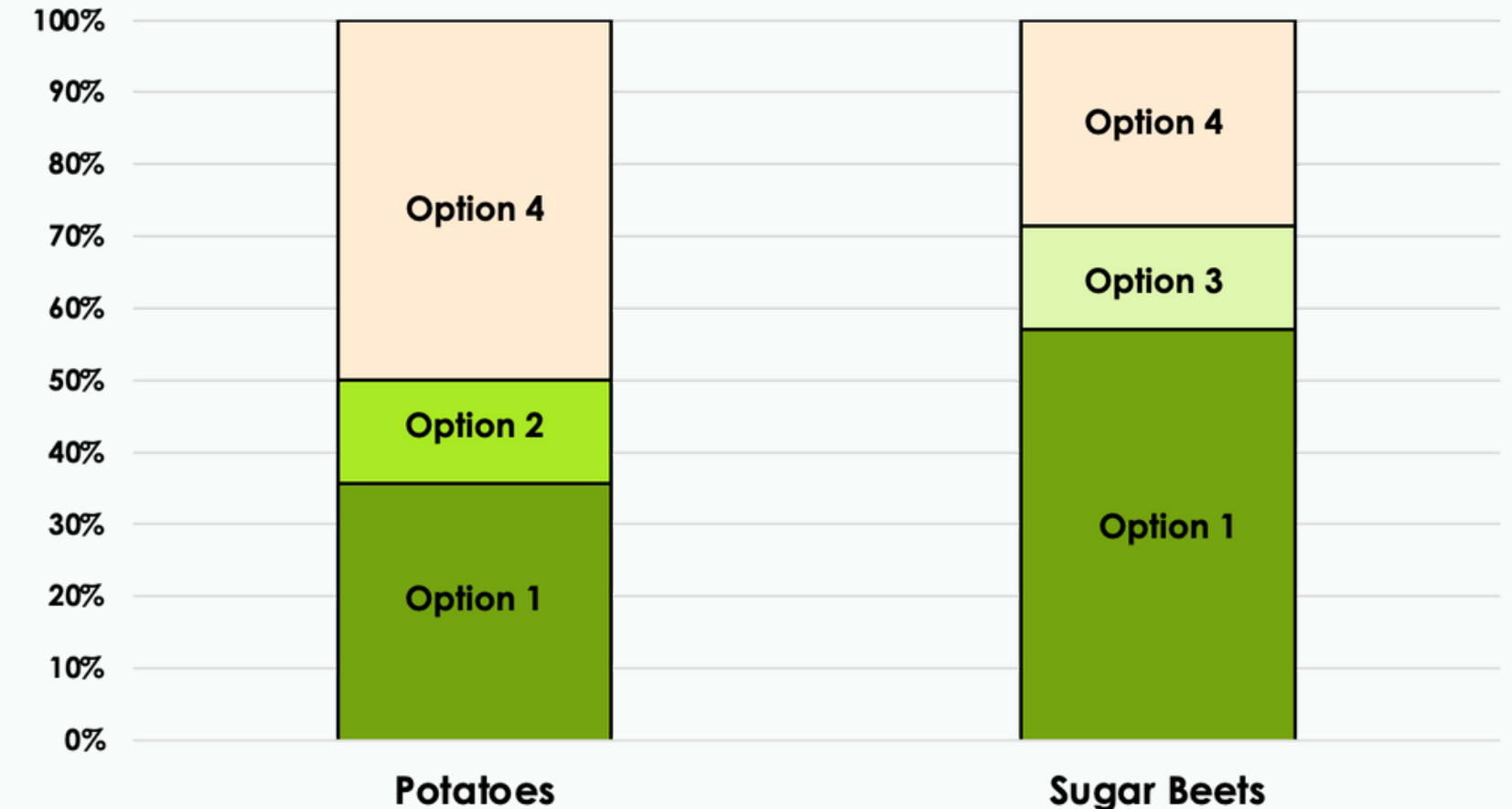
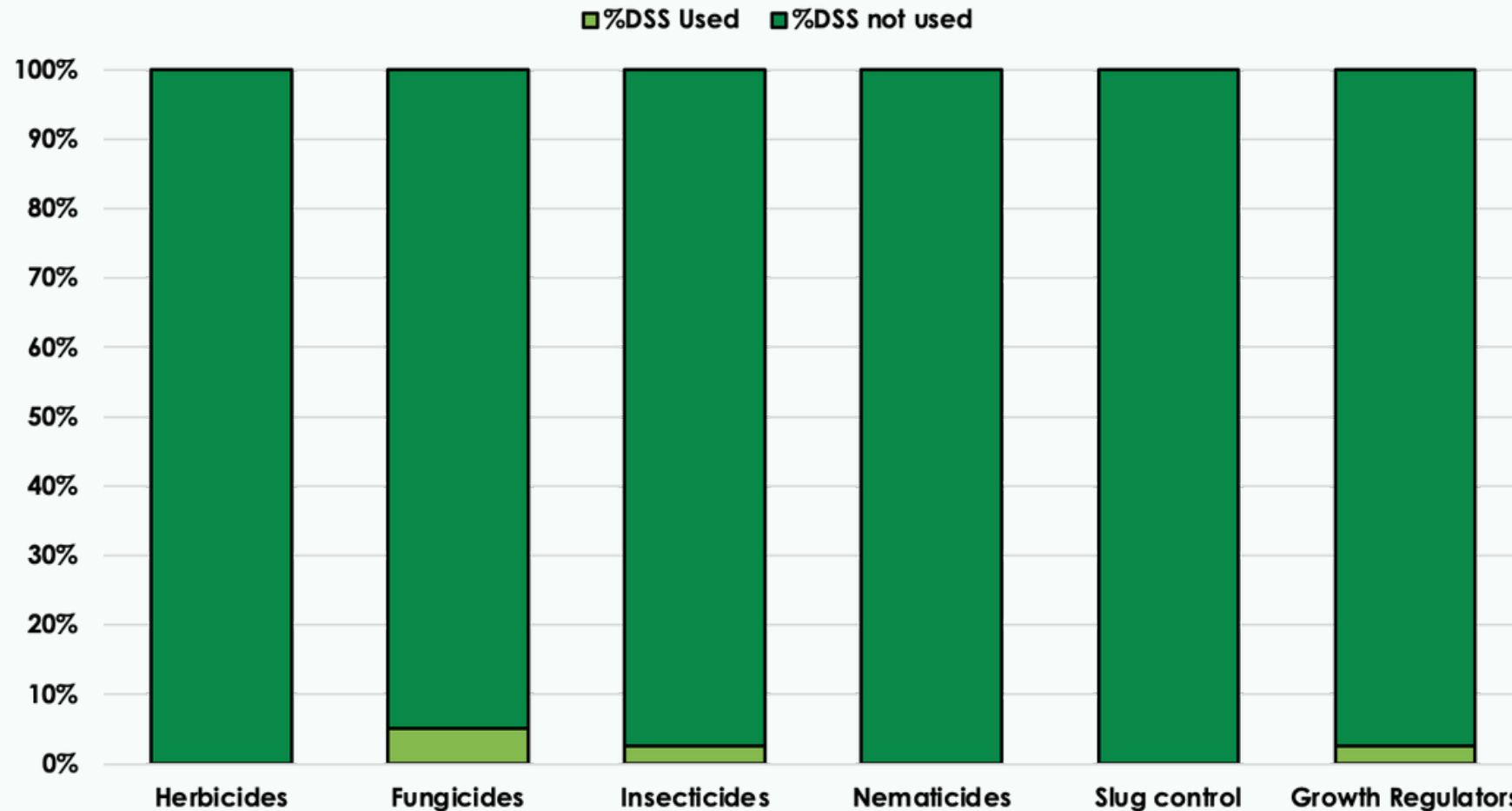
Cultural practices at the crop and farm levels were evaluated based on the last 3 cropping seasons. Farmers rated these practices between 1 (“Not at all true”) and 5 (“Fully true”), based on their individual perspectives.

Each practice rating was then scored between 0-4 and carried a weight of 1 in the calculation of the IPM Index, except “Choice of Pesticides” which had a weight of 2.

The IPM index is the sum of the weighted scores and ranges from [0 -80].



The range of IPM adoption varies across farms, and this explains part of the pesticide use.



- **Option 1** I choose predominantly varieties that are resistant against diseases and focus on healthy seed/planting material
- **Option 2** I predominantly mix varieties, with at least 3 different varieties and focus on healthy seed material
- **Option 3** In some cases, I choose varieties that are resistant against diseases
- **Option 4** I only choose varieties according to yield or market, or season, without checking if they are resistant to disease

Farmers did not cite any Decision Support Systems (DSS) for the implementation of herbicides, fungicides, insecticides, nematicides, slug control, and growth regulators.

DSS does not appear as a major component of IPM strategies in these farms.

The survey informs about how far the various components of IPM are already implemented by IMPWORKS farmers in outdoor vegetables.



Self-evaluation

WEED, DISEASE AND PEST CONTROL

Self-evaluation of the quality of the disease and pest control as compared to other farmers in the area. Results are presented as a function of self-evaluation in IPM adoption.

Quality of Weed Control

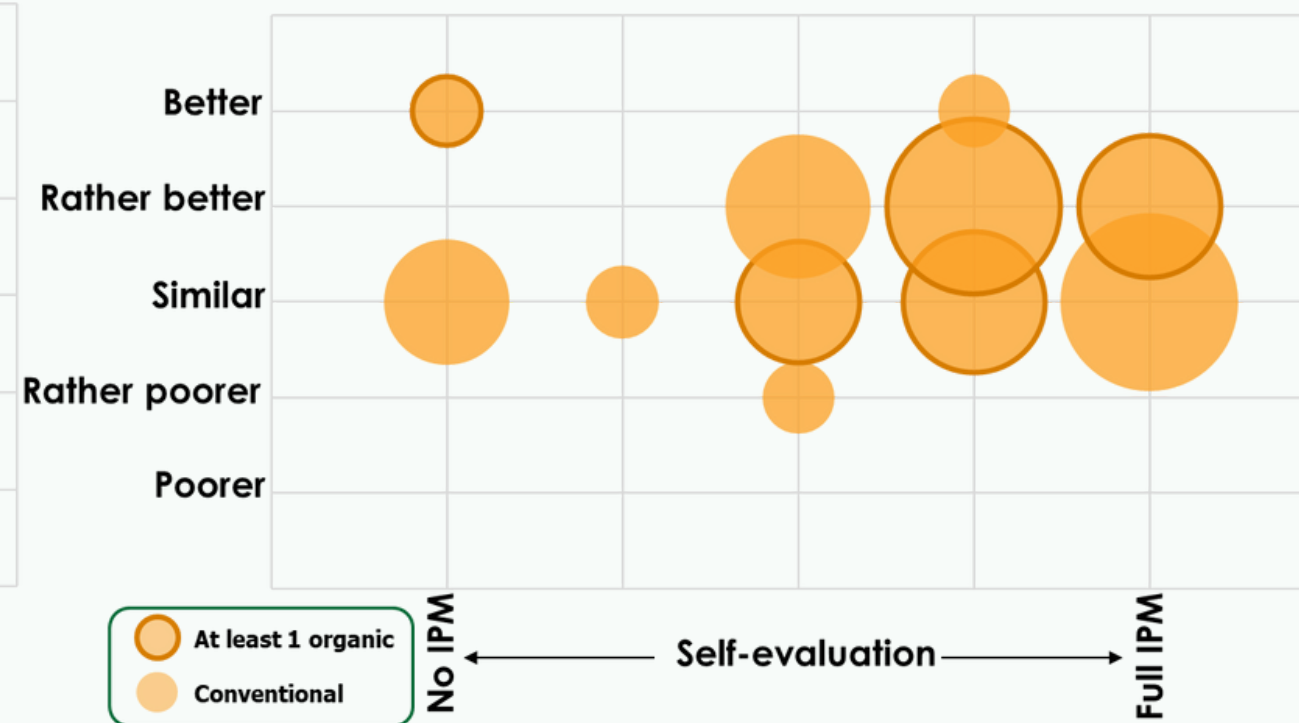
as compared to neighbour farmers...



Farmers consider weed control similar to better compared to neighbour farmers, whatever the level of IPM adoption. IPM is rather efficient for weed control.

Quality of Disease Control

as compared to neighbour farmers...



Farmers consider disease control to be better than neighbour farmers, whatever the level of IPM adoption. IPM is rather efficient for disease control.

Quality of Pest Control

as compared to neighbour farmers...



Farmers consider pest control similar to better compared to neighbour farmers, whatever the level of IPM adoption. IPM is rather efficient for pest control.

Self-evaluation

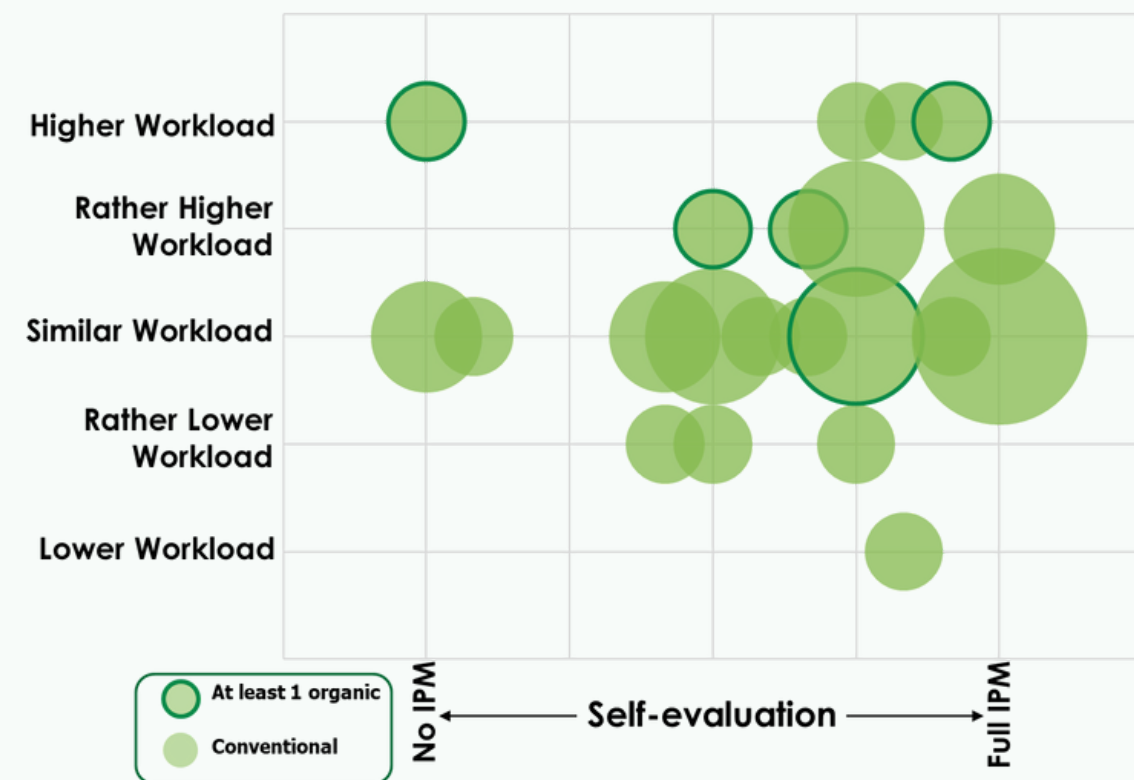
FARM PROFITABILITY

Self-evaluation of workload/ha, equipment costs, and gross margin as compared to other farmers in the area. Results are presented as a function of the self-evaluation of IPM.



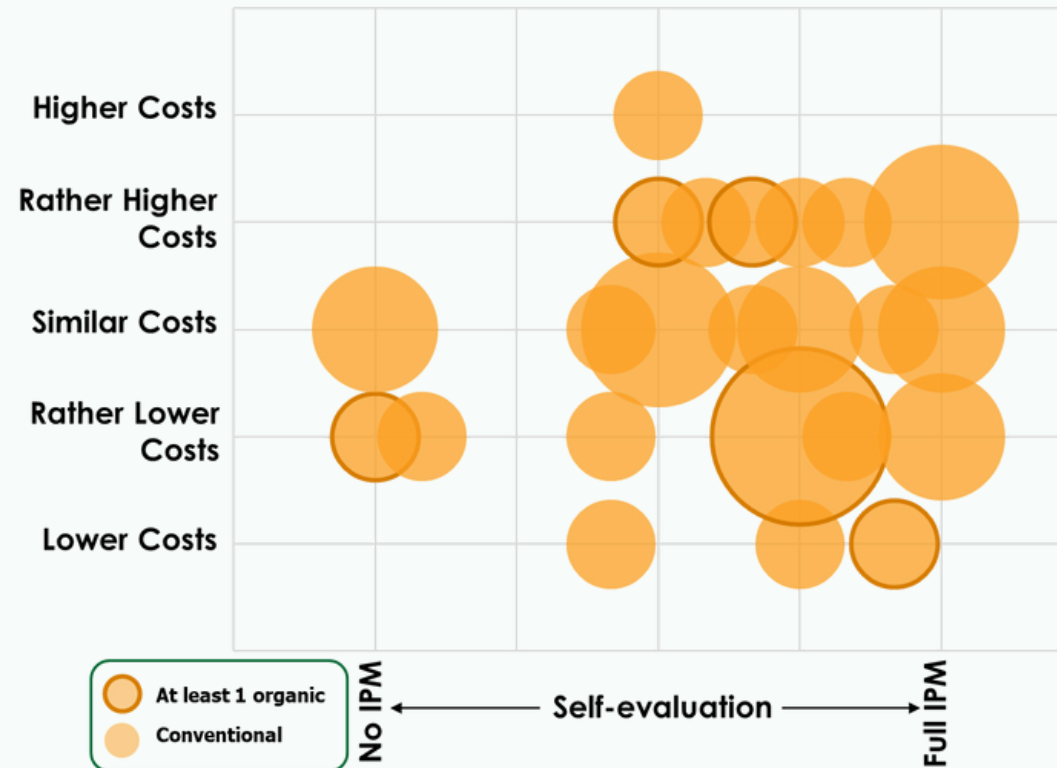
Workload / ha

as compared to neighbour farmers...



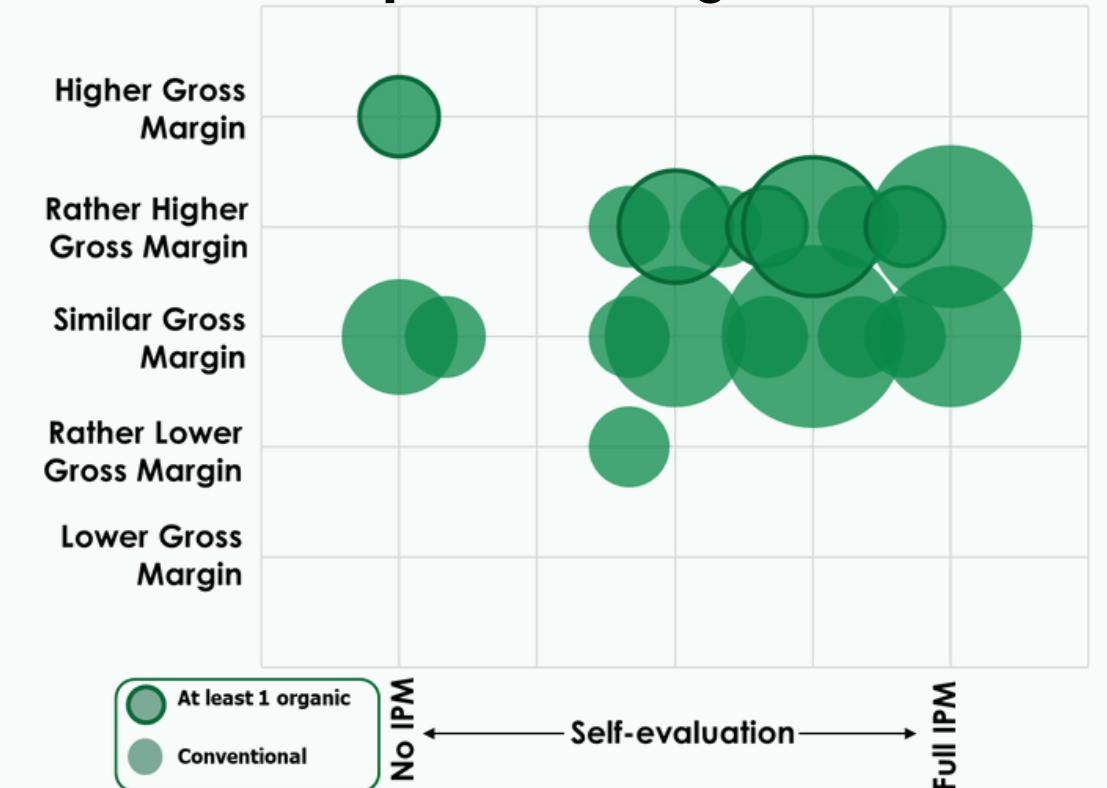
Equipment Costs

as compared to neighbour farmers...



Gross Margin

as compared to neighbour farmers...



No clear impact of IPM adoption on workload/ha.

No clear impact of IPM adoption on equipment costs.

Most IPMWORKS farmers think they have similar or higher gross margins than neighbours.
IPM is rather cost-effective.



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