What are the barriers that hold back the uptake of Digital & Precision Farming?
Insights from the Smart-AKIS survey

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Smart-AKIS

- Thematic Network
- Multi-actor project promoted by EIP-AGRI and funded by EU's Horizon 2020 programme
- Aimed at bridging the gap between practitioners and research on the identification and delivery of new Smart Farming solutions to fit farmers' needs

Survey Objectives

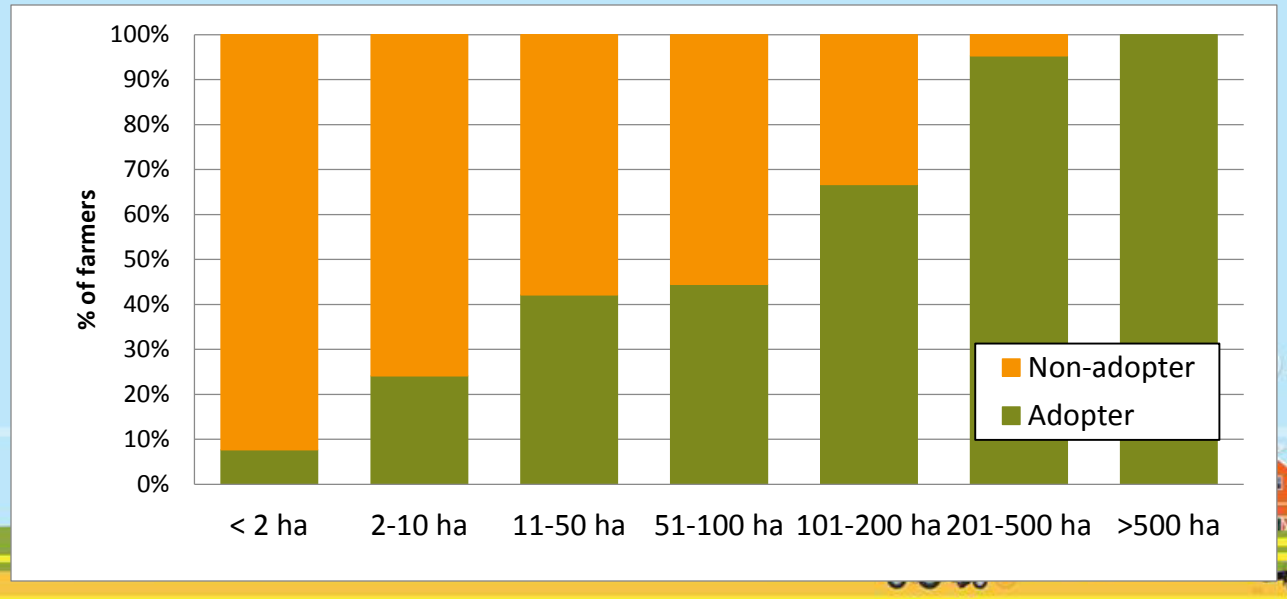
- Assess farmer needs, ideas, and interests
- Identify factors influencing adoption

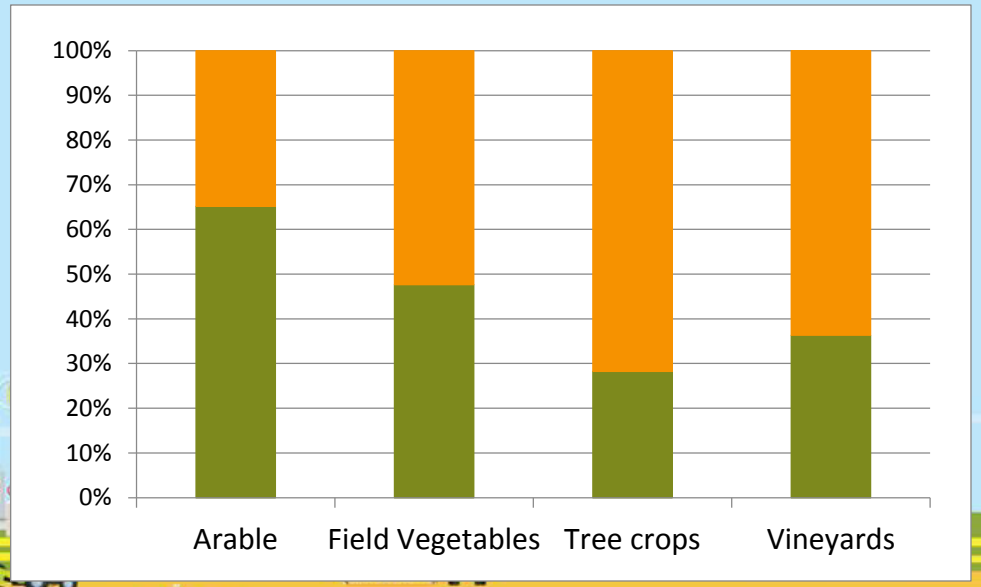
Survey Components

- Farmers' perceptions of challenges
- Farmers' perceptions of SFT potential to deal with challenges
- Farmers' information sources
- SFT types relevant to farms
- Key differences and similarities between adopters and non-adopters

Survey methods

- Partners contacted farmers and conducted 287 questionnaires
- Face-to-face or via phone
- Analyses differentiated by country, farm size and cropping system

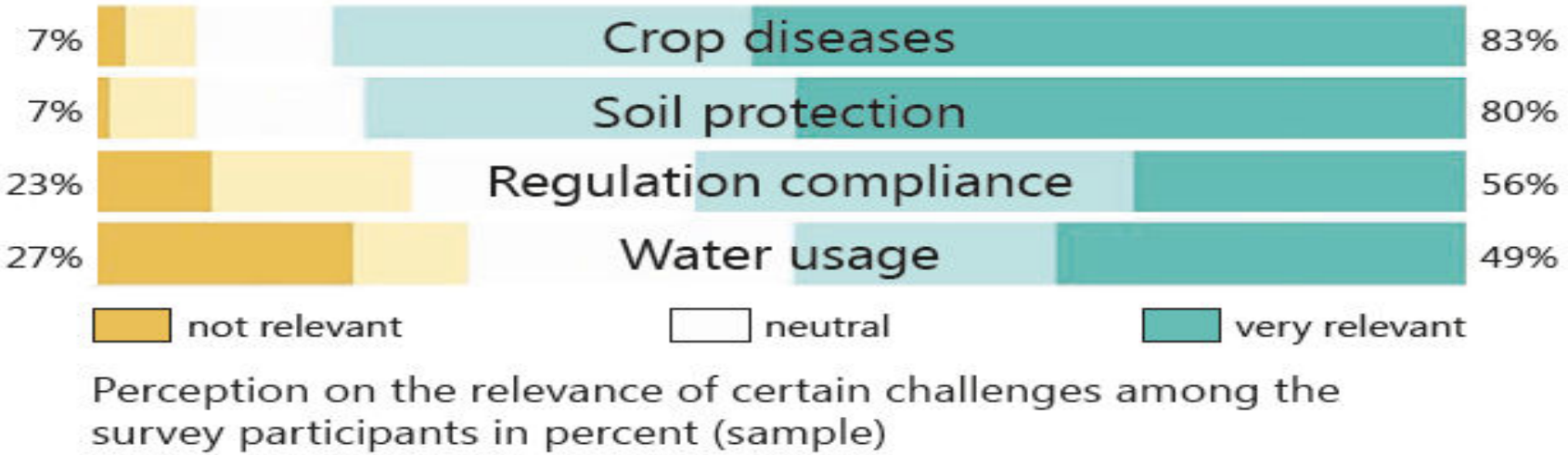




Farmers' perceptions of challenges

→ what are SFT important for?

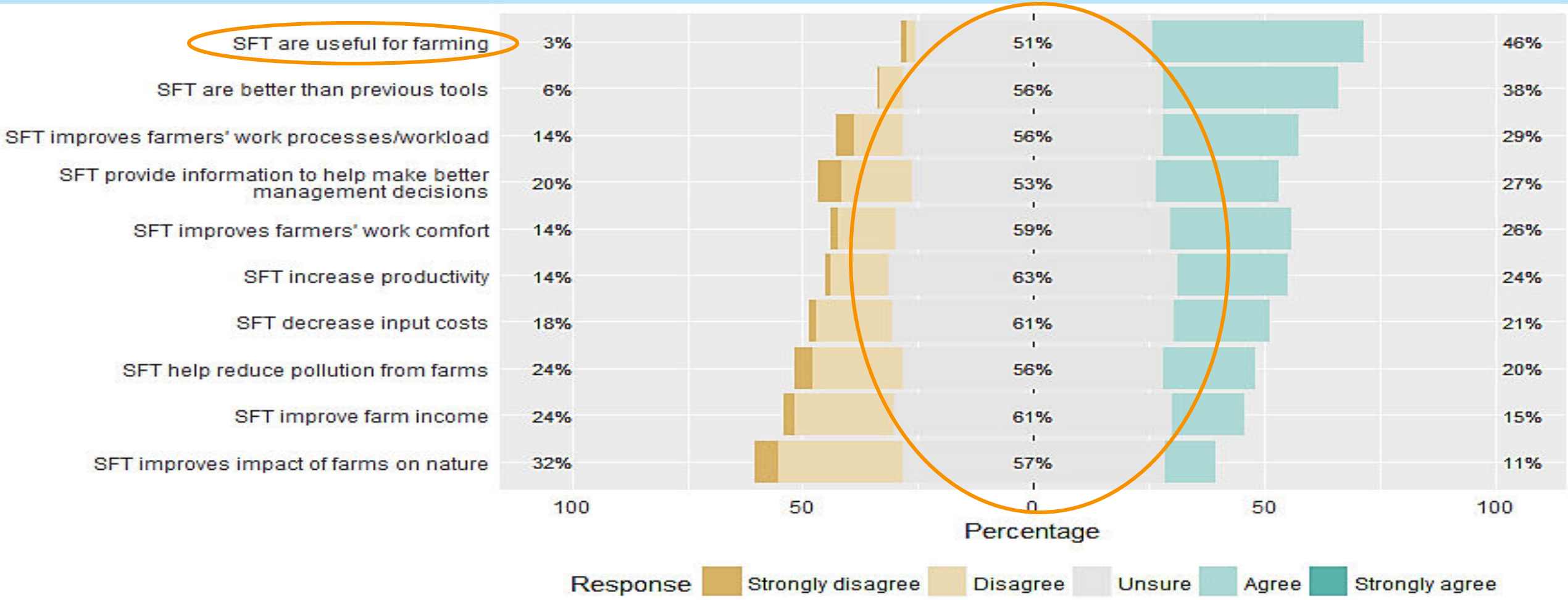
→ differs between countries and cropping systems



Perception on the relevance of certain challenges among the survey participants in percent (sample)

Farmers' perception of SFT potential to deal with challenges

→ Farmers assess SFT potential with caution



Perceived useful technology for farmers include:

- Robots for monotonous work processes
- Real-time diagnostics via drones, satellite imagery, or smart phone sensors
- Improved integration of various SFT
- Data for information and decision support

4 barrier groups to SFT use and/or adoption

1. Access to SFT
2. The technological system as a whole
3. Device-level issues
4. Data issues

Access to SFT:

- Improve access to information about SFT
- Reduce cost
- Improve infrastructure

The technological system as a whole:

- Simplification and consolidation of SFT and apps
- Compatibility between devices

Device:

- Efficiency
- Reliability
- Reduce complexity
- Device adaptation

Data issues:

- Data mobility
- Data transfer between devices
- Improve data transformation for better in-field decision-support
- Data security

Factors necessary for using/adopting technology

Non-adopters	Adopters
Cost-reduction	Cost-reduction
Simplify use	Improve data presentation
Improved technology for farm context and size	Universality and compatability of devices, improved level of precision
Cost-benefit model to highlight added value	Added value to current production methods
Demonstrations and personal „SFT tour“ with neutral contact	Neutral advice

Conclusions

- Crop and soil protection most important challenges for farmers
- Uncertainty amongst farmers for SFT potential to tackle challenges
- Key barriers proposed by farmers are related to:
  - Information outcomes and using them in the decision making process of the SFT
  - Reduce initial investment
  - Increase flexibility and scope of application of SFT related to size
- Barriers differ between non-adopter and adopter groups

Key points for further consideration:

- That there is (still) a lot of caution among farmers with regard to the potentials of SFT to address major challenges
- That farmers keep updated on SFT, and other farmers are most important sources of information
- That farmers are experimenting themselves and also have ideas for SFT improvements → stay in touch with them!

Thank you!

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