

Digitization - Methodology

- ▶ “Digitization” is not a specific Topic of the 4th SWG AKIS mandate
- ▶ However, willingness of the SWG to be reactive and to provide **cross-country analysis on important and trendy topics.**
- ▶ **10 presentations on Digitization : 8 MS + EIP workshop “Data sharing” + Copa-Cogeca**
- ▶ The following presentation is based on these presentations + own knowledge of the SWG AKIS members
- ▶ Two main questions:
 1. **State of the art** of digitization in agriculture in MS and Europe
 2. **Prospects and perspectives** for digitization in Agriculture
- ▶ Questions and answers should be understood through **the SWG AKIS perspective** (Knowledge exchange – Multi-actor – Interactive Innovation – Education – training etc...)
- ▶ The main entry point is the **Farm/Farmer** : but considered as part of a wide system (AKIS – whole value and supply chain)

Current important agricultural digitization topics in the EU

More precise production:

- ▶ Resource efficiency : natural, input, labour
- ▶ Management systems : animal, green housing

Marketing of production:

- ▶ Stronger producer – consumer relation
- ▶ Segmentation of markets
- ▶ Transparency, tracking and tracing, quality standards

Knowledge based decision making:

- ▶ Digital education and advisory services
- ▶ Simple applications for the supply chain for all farmers

Who benefits from Digitization?

- ▶ **There are differences in digitization developments between different EU MSs and Regions**
(Characteristics of the AKIS? of the farming sector – farm size, etc...)
- ▶ Yet, digitization might stay **a niche** for the majority of farmers for the coming generation....
- ▶ Focus on **farmers and their families**: they have to benefit!
- ▶ Debate on the statement that “Digitization could create other jobs in rural areas”:
 - Services related to agriculture rather than in the farms themselves?
 - Changing existing jobs?
 - Create new services (with employment)?
- ▶ Digitization will generate **cross-over competences in the future**: agriculture with ICT, health care, water management, tourism, etc.

Why farmers adopt digitization?

DIGITIZATION is not a goal in itself : It's a mean to reach permanent goals:

A natural process of technology adoption

- ▶ So that best performers (regardless farm size) exclude less performers from the system
- ▶ Should be done in a cooperation and with incentives to me more efficient and more fair
- ▶ Caution: Gap between adopters and non adopters....

Continuous need for efficiency

- ▶ ICT was not invented today : **Digitization is not new!**
 - previously dairy cattle farms adopted cost-efficient milking robots
 - reduction of water consumption in irrigated areas

Fulfilment of juridical and/or environmental demands

- ▶ e.g. sensors on farms and devices to better manage fertilization, irrigation, reduction of waste

Consumer and societal demands

- ▶ social responsibility, transparency in the value chain (pricing, origin, nutritional aspects, footprint, etc.)

Data and ICT use

Need for regulation and standard for data exchange : Protecting data ownership while allowing business development.

- ▶ Ownership, Intellectual Property Rights, governance : prevention of digital conflict
- ▶ Open access and use of data, e.g. data could be used inappropriately
- ▶ The difficulty to create added value from data
- ▶ Standardization of data systems
- ▶ Data security
- ▶ Legal problems with data sharing or accidents such as shut downs : necessity for common frameworks

Digitization at farm level

- ▶ **What is the added-value for farmers?**
 - Resistance to change / Risk taking / Trust / relevant skills / broadband access
- ▶ Farmers need to **invest on digitization** – What is the return of the investment?
- ▶ Question of the **added value for farmers** (and beyond) and efficient data capture?
 - Benefit limited: Should find benefits from providing data
- ▶ Getting **digitally organised as a farmer** and resistance to collaboration ?
 - Difficulty to work collectively and also in cooperation
 - Farmers hesitate to be reliant to other organisations
 - difficult to change their organisation and business
- ▶ **Neutral bodies** should accompany the farmers in this process!
- ▶ Interdependency in the IT chain and system failures, leading to stress!

Digitization and AKIS: Education, training advisory services

- ▶ Gap between **digitally rich and poor actors in AKIS**
 - digitisation requires skilled actors next to proper hard ICT infrastructure
 - Gap between integrated and fragmented AKIS
- ▶ Information overload requires **new skills to be able to identify the right information**
- ▶ **New curricula** on Agriculture together with strong IT trainings (cross fertilisation)
- ▶ Avoid digital intelligence versus practical ignorance: **maintenance of practical agricultural skills !**
- ▶ **Digital training** by support services is currently not enough successful:
 - Missing links with practical skills
 - The speed of this shift depends on soft skills (interceptions), taught at an early age.
 - changes only in next generation (Natural aspect of Digital for new generation)
- ▶ Risk of systems being hacked: provides new jobs/actors for professional hackers in the AKIS to secure data systems

Digitization potential impact on EU AKIS(s)

“Building trust, expertise, common goals and multi-actor collaboration”

- ▶ **Scattered AKIS** might reduce the potential for holistic IT systems.
- ▶ Due to **competitive stakes**, data sharing in the value chain could be limited:
 - A neutral/independent data broker is required as a guide and referee (farmers will trust).
 - If only company driven agenda > data sharing will be limited!
- ▶ ICT can help **to work cross-cutting, to connect different sectors** and agricultural areas
- ▶ ICT and social media could potentially (if strong AKIS):
 - ▶ Give a boost and accelerate knowledge exchange, data sharing and matchmaking through support platforms (**Peer to peer data sharing**)
 - ▶ Increase the quantity and the quality of information
 - ▶ provide quick and responsive information in terms of crisis (climate change, diseases)
 - ▶ provide easier access to knowledge and information, through increasing apps

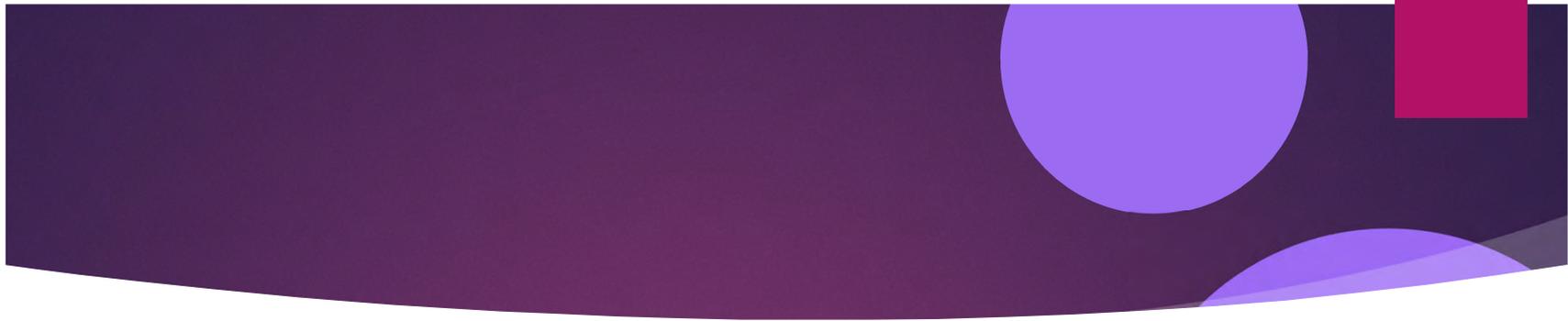
Digitization: Attracting new entrants?

What will be the incentives to become a farmer in the future?

- ▶ It is not foreseen that ICT is a real lever to **attract** new or young farmers : young people will innovate anyhow!
 - However, it could attract some **educated engineers** to farming!
- ▶ ICT could have more effect on **creating other jobs/ services in rural areas.**
- ▶ Risk to **reduce the numbers of farmers** or farm hands!
- ▶ High-tech might be interesting if it influences **incomes + social conditions!**

Conclusion

- ▶ Digitization could help and support farmers for most of their challenges!
- ▶ However, digitization is not new and follow and an incremental process of adoption.
- ▶ Need for regulation and standard for data exchange: Protecting data ownership while allowing business development!
- ▶ Farmers need to identify a clear added-value and need trust and to be accompanied by “neutral actors”: not only company-driven...
- ▶ It could participate to create added-value (jobs) in rural areas and the farming sectors...but we must pay attention to the model that will be favored...
- ▶ Digitization could have a positive impact on the AKIS (attention to maintain equity within and between AKIS)
- ▶ Digitization could be a lever for the next generation of farmers.



**On behalf of the SCAR SWG AKIS
Thank you for your attention!**