The role of digital agriculture in agroecology and food sovereignty

Andrea Ferrante

Schola Campesina

International agroecology school

Www.scholacampesina.org

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Preamble

- We produce for 12 billion people
- We waste 30% of the production
- Family farmers are feeding the vast majority of humanity and they sell through local markets
- Family farmers are becoming more poor, we need to increase their quality of life
- We can't afford to have more people in urban areas

The role of digital agriculture in agroecology and food sovereignty.

Innovations for family farming must deliver improved livelihoods in rural areas.

All innovation has to comply with the SDGs and this means: more people working with more value and higher quality of life.

We need to assess every innovation under this perspective.

The role of digital agriculture in agroecology and food sovereignty.

Innovation can't mean fewer farmers and less work in rural areas.

Farmers provide the means for achieving a basic human right: the right to adequate food -- without them this right is no longer granted.

Agroecology is the innovation based on **peasant knowledge** centered farming systems.

Agroecology strengthens famer's knowledge .

digital agriculture and knowledge

30. With digitalization, **data becomes increasingly an economic good**; thus, the value of data increases. Therefore, data sovereignty – which can be defined as entities (countries, physical and legal) being in control of their data – becomes a challenge, requiring greater regulation and effective governance. Creating and implementing data sovereignty standards can foster digital trade and business interaction, since it allows for data sharing while maintaining ownership over the data.

(E-agriculture – FAO ERC2018)

Digital agriculture and farmer's rights

The often raised hope that digitalization would lead to more sustainable agricultural systems, is not coming true **when companies, who make profit from selling the means of production, take over the whole crop-planning by gaining data sovereignty**.

Data privacy and data rights should be secured on a political level. (FA0 ERC 2018 and GFFA2019)

Digital agriculture and data control

Risks:

Hardware change with machinery, drones, robots, satellites. Also includes robotics. Massive robotic machinery which does all fit to the plant varieties. These large machines can break down into small ones and move over to small plots of land. Scale is not a concern for them.

Software changes: Digital DNA. They both used by a mouse and a keyboard. There is a concentration around those technologies. Who has the control of information? In the past it was controlled by the farmers. It is also a threat to national security. Facebook is an example of misuse by those who control data.

Control of information in currency and block chains (behind bit-coin is the block chains – electronic control for the movement of germplasm – natural information). Reduce the transaction costs and the middle man by the block chain. Farmers can contact the market place by the cell phones.If you argue that the biopiracy will be a major risk they will argue that blockchain systems will protect the states and farmers. Block chain technology is able to transfer information of the material.

Insurance: Crop insurance will be an issue! If you do not respect the conditions of precision agriculture, no insurance company will cover your loss.

Digital agriculture and data ownership

29. **Data ownership** and data sovereignty: the service providers that market digital agriculture systems and data storage platforms are very often commercial providers. No standardized rules exist that govern the ownership of data generated and collected by machinery and technology on the farm, and it needs to be clarified whether those data should be owned by the farmer, by the service provider, or by the government. Concerns exist regarding the potential misuse of data by the service provider, such as third-party data use (often of data validation and method improvement). This will require the development of appropriate regulatory frameworks. Furthermore, data ownership needs to be further discussed and regulated in relation to the promotion of open-access data and the mitigation of security concerns.

(E-agriculture – FAO ERC2018)

Innovation and digital agriculture

Concentration of economy as synonymous of e-economy.

E-economy is the most concentrated economic sector in the world, we can't apply this model in agriculture.

Farmer's led digital agriculture

Our good examples:

www.insightshare.org

http://farmhack.org/tools

https://www.latelierpaysan.org/

http://www.eurovia.org/eaken/interactive-map-of-initiatives/

Innovation for family farming

Some proposals to share:

1. Innovation as farmer/community led process for the wellbeing of family farming. Agroecology (Nyeleni 2015) is an example of that: food producers knowledge is central in this process .

2. Innovation goes much beyond digital agriculture.

3. Assessment of the on-going digitalization innovations in alliance with technological sovereignty initiatives

4.Regulatory frameworks that prevent any privatisation of data

5. Precautionary principle applied in all policy recommendations on the implementation of digital-agriculture

6. Support policies and practices of the food producers' lead initiatives on digital agriculture as already foreseen in the Global Action Plan of UNDFF