

Pathways towards a fair, inclusive and innovative Data Economy for Sustainable Food Systems

Data4Food2030

SCAR Workshop "Assessing digitalization in food systems" 22 November 2022, virtual





The need



Experiences in

previous projects;

Data sharing as the 'hot potato'



The need

Data Economy: An ambiguous buzz word

Crossing organizational borders:

Necessary for the next phase in the

digitalization of the food sector

More insight on specific

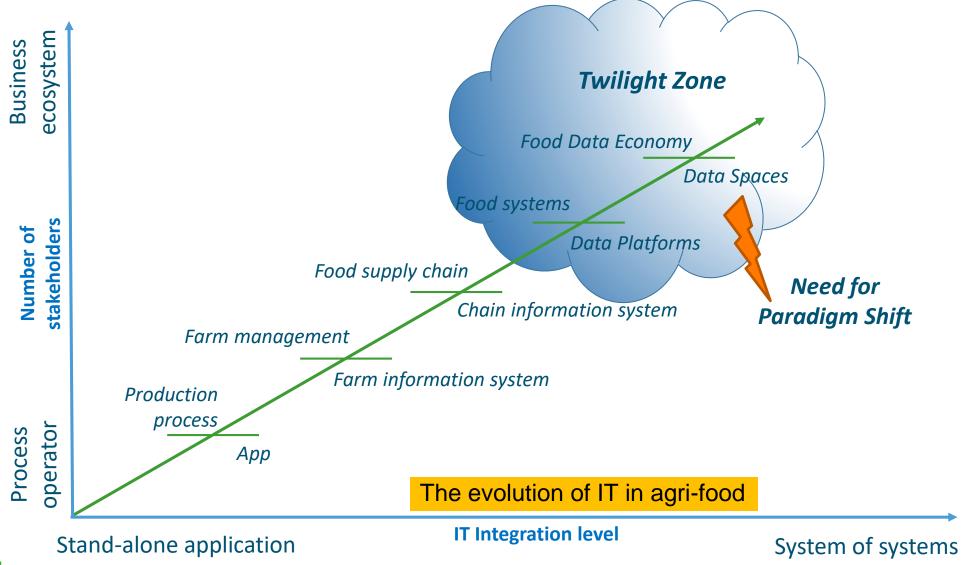
characteristics of data

economy as critical success

factor for new initiatives



Target of the project

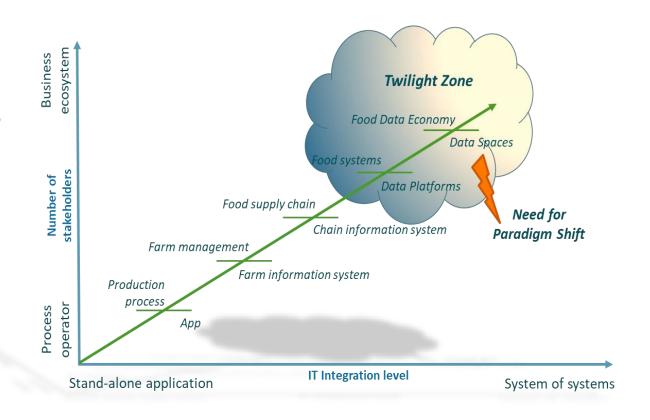




Source: Wolfert et al., 2021. Navigating the Twilight Zone - pathways towards digital transformation of food systems, Mansholt Lectures. Wageningen University & Research, https://doi.org/10.18174/552346

Challenges

- Beyond user-centred design
- Focus on data sharing between multiple stakeholders in various roles
- (Eco)System of (eco)systems:
 - Multi-sided business models
 - Complex technical integration
- Funding also becomes complex





Case Studies – data flows

2 Perspectives:

- From Farm 2 Fork, and even circular
- From Data Sharing to Governance in the food system

Areas Addressed

- Covering 7 agri-food sectors
- tourism and waste management

Fair Data Sharing in Short SC



Food Production

Premium Grain Chain (PGC) Arable/Grain



Developed Sitra Fair Data Economy Rulebook model to facilitate data network building.

Cooperation of Members of the AgriFood Data Space Finland (AFDSF) ecosystem.

How to manage data flows & infrastructure for data categories: sustainability, food quality, traceability & farm cooperatives. To realise Premium Grain Chain dataenabled quality label?

Food System Development



Consumer Involvement (PIGLink)



Diverse data is collected on pig farms like animal

Farmer organizations, 5 equipment manufacturers, ICT,

butcher pork association, 3 pig breeders as direct partners &

How to measure sanitary actions' impact from available data

and use measured consumer expectations for farmers' daily

perform., veterinary treatment & initial T&T data.

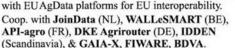
10,000 pig breeders as stakeholders affected.

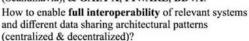


AgData-Interoperability (TEUDS) Arable, Dairy, Pig, Wine



DjustConnect operation is enhanced by full collaboration







- Also including retail,



Short Food Supply Chain (ZeroFLW) Public Food Supply, HORECA



Installed short food supply chain marketplace for local food

& produce focusing on reduction of food loss and waste (FLW) with strict quality control.

Connecting all Pomurje regional small stakeholders to Hotel, Restaurant, Catering (HoReCa) and all public food demand.

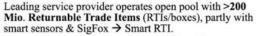
How to regionally join forces for systematic data aggregation helping vegetable producers and SC to optimize farms and reduce significantly FLW in the local food system?



management?

RealTime-FreshData (DIRECT)





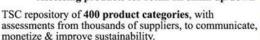
Thousands customers from F2F, provide, trade, transport & retail F&V in these RTIs. Services for F&V chains in 27 European countries provided.

How to extend use of operational real time data (e.g. location, temp., acceleration) with item travelling via multiple potential data owners?



GlobalSust. Assessm (THESIS)

Assessing products for retail all chain up/down



'The Sustainability Consortium' (TSC) with >100 large global food chain stakeholders (e.g. BASF, Bayer, HSBC, Pepsico, Unilever, Walmart, WWF)

How to unlock KPI data from food system to consumers and to enable B2C, B2Retail, B2Finance, B2G and general B2B potentials?



UrbanFoodWaste (M&V-FLW)

Municipality / SmartCircularFoodCity



Amsterdam works on the strategic objective to become fully circular by 2050.

Amsterdam Metropolitan Area (AMA) municipality & its waste collection comp., food companies in AMA (e.g. processors, retailers, HoReCa, good2go).

How to valorise waste stream data, to create economic, social & environmental knowledge for stakeholders' data economy in AMA?



CircularEconomy4Tourism (I4Data)

Wine & Almonds

Complete chain covered with stakeholders, working in circular ecosystem; tempted to fully share data allowing a circular economy for Tourists.

29 agri-food cooperatives with >6000 farmers of 4 Balearic islands & 2 wine Designation of Origen.

How to improve and make old local production methods more efficient based on full chain data including reduction of environmental impact for a circular economy?



Retail of regional products (Fruits&Veg., wine)

involving consumers.

Data available at producers, transport, tourism, regional planning, regional socio-economic dev. & retail aiming at

LocalSupplyData (DaaS)

10 social farms & 500 SMEs in short chain, CZ Agriculture Association & Uhlava o.p.s.

How to enable an inter-sectorial data use with Data as a Service, focusing on sustainable & socio-economic development of the region?







Project Approach

..the concept of **Data Economy**

- → Towards a common and shared vocabulary
- → Embedded in Scientific Literature

Specify

Define

..indicators for progress of Data economy

Dashboard for monitoring progress

..with existing initiatives in the food sector

Hands-on approach

→ Observing the cases

→ 9 case studies

- → Mapping on dashboard
- → Identify barriers
- → Experiments with **improvements**



Topics to address

Paradigm
Shift for
Data
Economy



ICT attracts huge funding, but technology moves faster than social sciences



Need for 'soft' assets to reach the potential

(e.g. inclusiveness, fairness, resilience, variation)



Multisided Business models



Governance structures



Incentive structures



Trust



Outcomes



Policy recommendations for facilitating and stimulating Data Economy



Develop scenarios and roadmaps for further development

Better understanding of Data Economy, will allow the European food sector and citizens to harvest the sustainability benefits (PPP)



Our vision



Our key deliverable

A critical mass of early adopters and agents of change across the stakeholder spectrum as the nucleus for the paradigm shift











Thank you!









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Faculty of Electrical Engineering and Computer Science



