Inventory of R&I Infrastructures

improving knowledge flows in agriculture

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Common Agricultural and wider bioeconomy reSearch Agenda

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SCAR akis
Agricultural Knowledge and Innovation Systems

Objectives of the study

- Map R&I infrastructures (soft & hard) supporting knowledge flows in agriculture
- Provide inspiring examples from in- and outside Europe
- Identify synergies between different R&I infrastructures
- Distil lessons learned to support the upgrading of competences of AKIS actors
    - in particular within the scope of EIP-AGRI thinking

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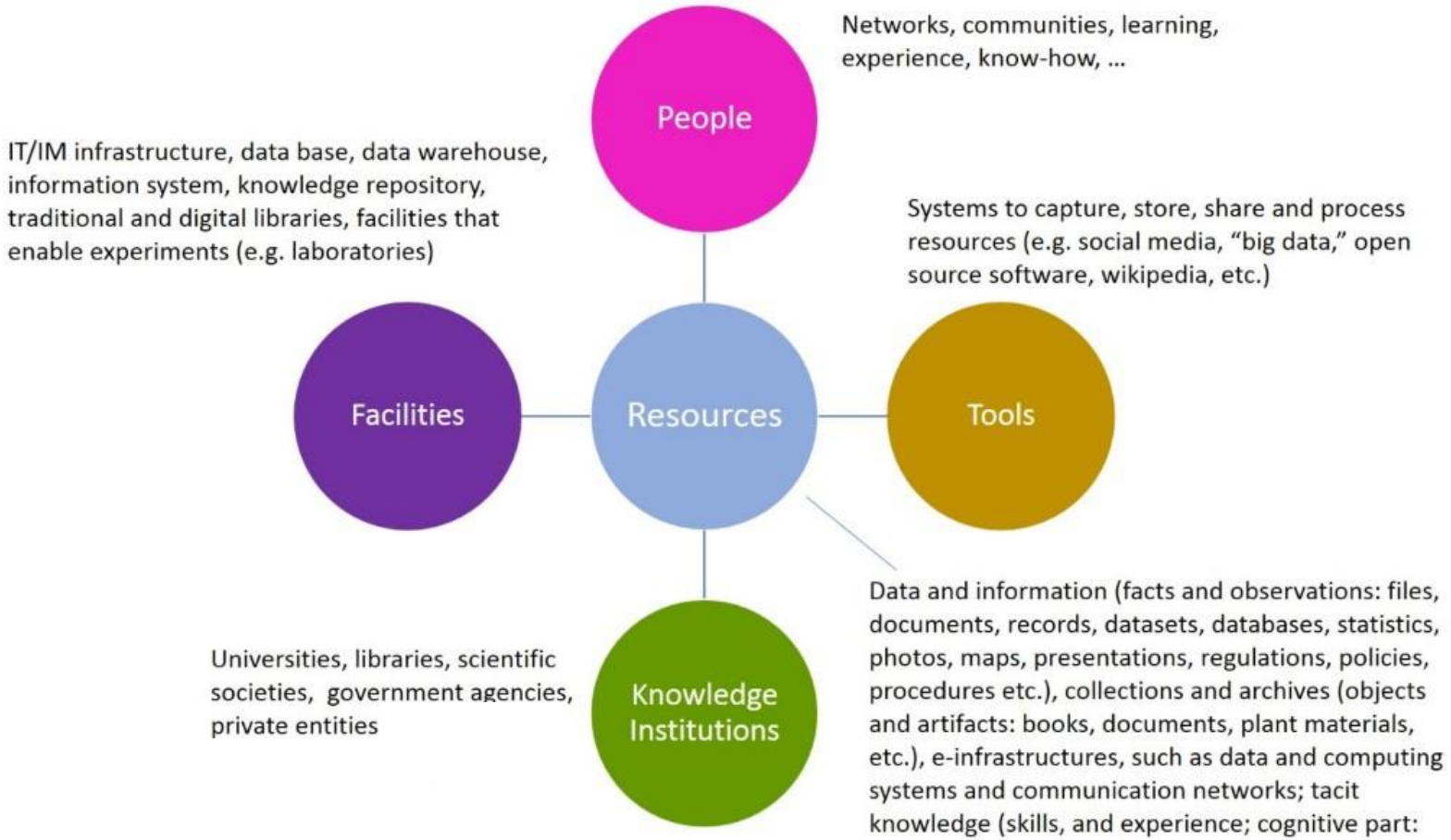
Content of the study

- Summary of the existing literature & web content
- Lessons from earlier projects e.g. IMPRESA, SOLINSA
- Input from the workshop in Brussels October 2018
- 8 case studies
- Lessons learned & recommendations

Defining R&I Infrastructures: a challenging task



Source: our elaboration

R&I Infrastructures: which knowledge flows?

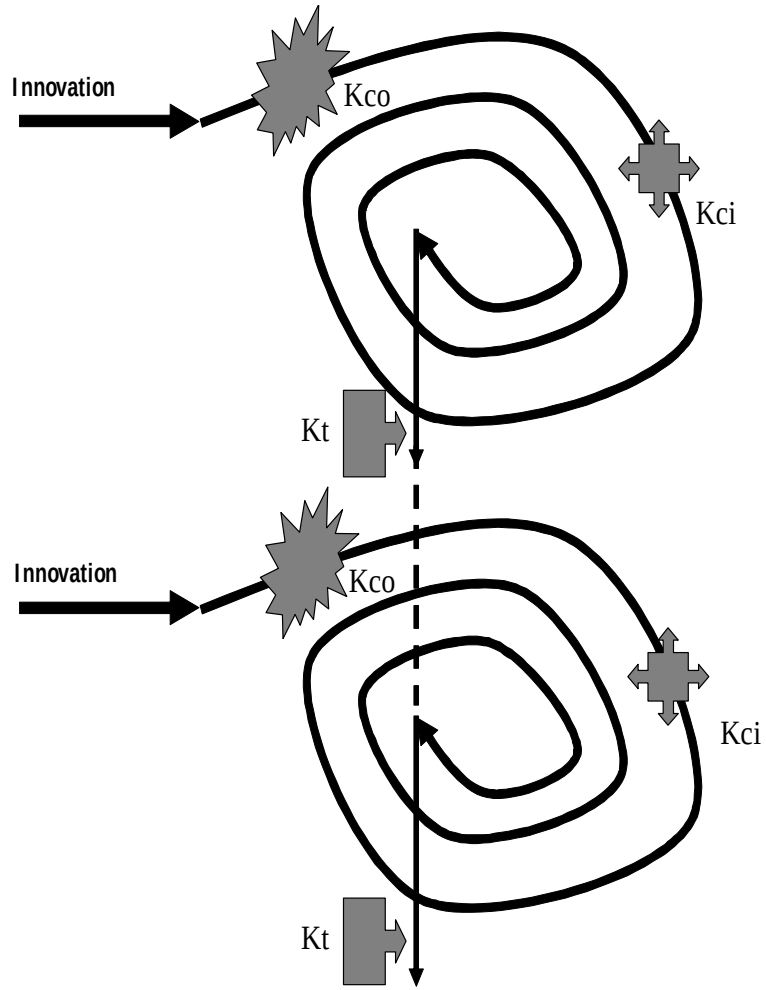


Figure 1: Knowledge and innovation

Kco = Co-creation

- Chaos
- Confusion
- Uncertainty
- Searching

Kci = Circulation

- Diminishing uncertainty
- Aim of solution is known

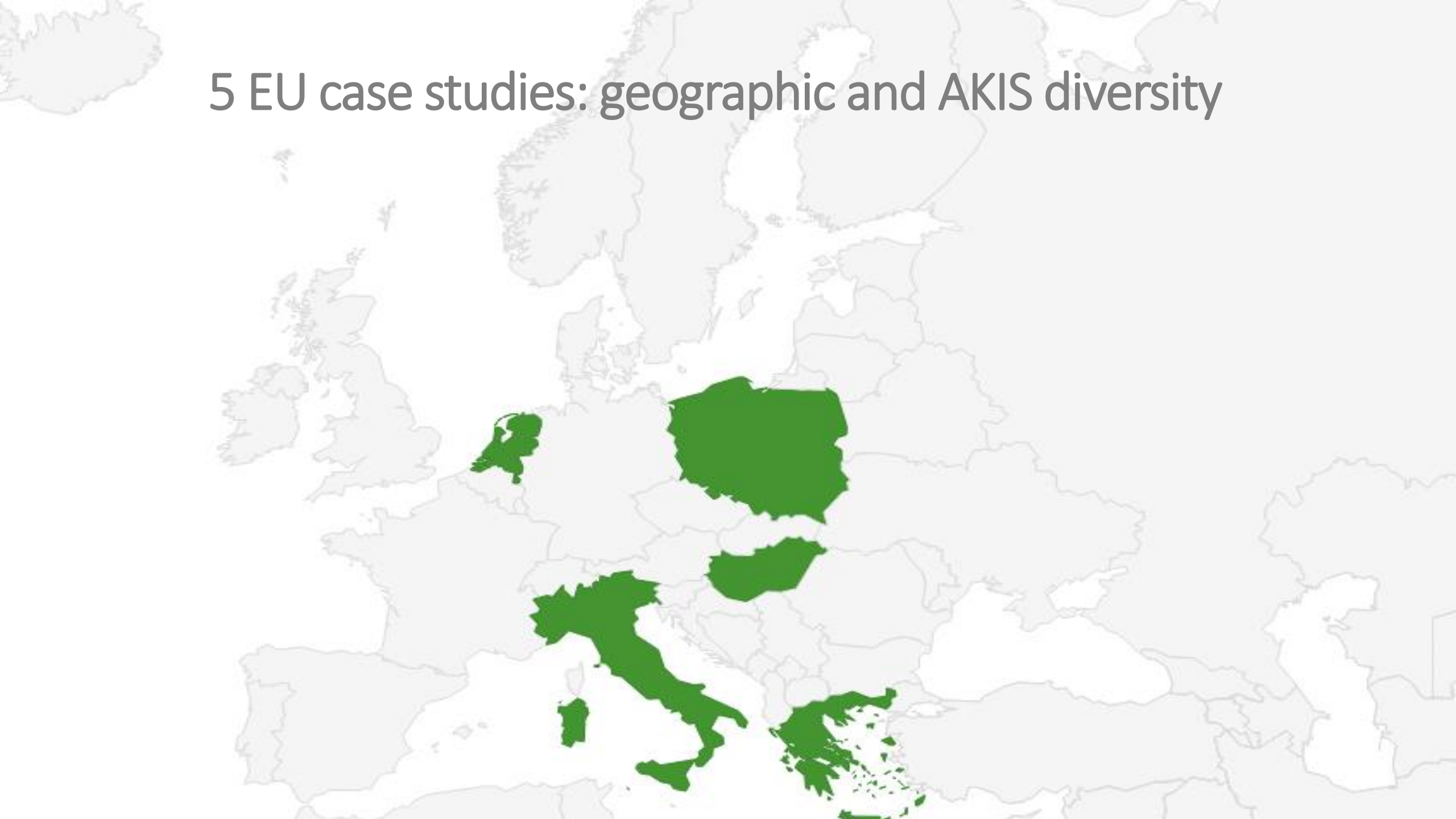
Kt = Transfer

- Solution is known
- Explicit knowledge
- Communication

TYPOLOGY OF R&I INFRASTRUCTURES IN THE EU

APPLIED RESEARCH INSTITUTES	Organisations which focusing on making research results applicable for different target groups through scientific research or applied research. The output of applied research institutes depends on the demand of the end-user, i.e. products, services or processes to be implemented in practice. ARIs are not or not as restricted to scientific output, since science is not the main target field as universities.. R&I activities and projects are either publicly, public-privately or privately financed.
RESEARCH INFRASTRUCTURES	Facilities, resources and services used by the science community to conduct research and foster innovation. They include: major scientific equipment, resources such as collections, archives or scientific data, e-infrastructures such as data and computing systems, and communication networks. RIs can be single-sited (a single resource at a single location), distributed (a network of distributed resources), or virtual (the service is provided electronically).' There is no EU research infrastructure which addresses agriculture specifically (yet).
EXPERIMENTAL RESEARCH STATIONS	An agricultural experimental station (AES) or agricultural research station (ARS) is a centre where researchers cooperate with agricultural entrepreneurs, chain partners, advisors, extension agents and other actors on difficulties, potential improvements competences and skills on agri-food production and agribusiness. Many agricultural experiment stations are linked to national or regional agricultural universities or applied research institutes.
INNOVATION HUBS	IH focus on developing innovative products, services and training in a specific area of their Innovation Community, taking targeted actions to help overcome key challenges in that field. Each Innovation Community operates with its own management, legal structure and business plan and has its own clear, measurable objectives to deliver value to its partners and EU citizens. They constitute the backbone of an Innovation Community and should have a strong management, enabling collaboration within the Hub itself and with partners from other hubs. They can be both physical locations such as agri-business parks or campuses or virtual such as digital innovation hubs.
DISSEMINATION INFRASTRUCTURES & REPOSITORIES	Both hard and soft enabling facilities and tools or settings, to support the collection and transfer of knowledge. Types of infrastructures for knowledge transfer are: (1) *Databases:* a database is an organized collection of data generally stored and accessed electronically from a computer system; (2) *(Digital) libraries:* a digital library, digital repository, or digital collection, is an online database of digital objects that can include text, still images, audio, video, or other digital media formats. In addition to storing content, digital libraries provide means for organizing, searching, and retrieving the content contained in the collection; (3) *Knowledge reservoirs:* a participative tool to host all existing knowledge developed by research or derived from practical experience.
(OTHER) R&I NETWORKS & CLUSTERS	Groups of actors, homogenous or heterogeneous, who collaborate on co-creating, circulation and/or transfer of knowledge. They can have a formal or informal character and work on various technology readiness level (TRL) R&I activities.

5 EU case studies: geographic and AKIS diversity



Insights from the EU countries

- Most of the RIIs types can be found in each MS
- RIIs sited at regional, national and transnational level
- RIIs at different maturity stages: most advanced in NL, least in PL and HU
- Prevalence of ”traditional” RIIs based on the core public institutions of AKIS
- Strategic approach to develop RIIs: national roadmaps, dedicated bodies and networks
- Strong shift towards more applied research and digitalisation
- Low funding to agricultural RIIs against other R&I priorities in most of the countries
- Diverse financial instruments at national level, e.g. venture funding, grantmaking programmes, EU regional funds
- Increasing use of the public-private partnership (esp. NL)
- Inter- and multi-dscinplinary RIIs transcending the agricultural domain (e.g. focused on bioinformatics)

3 non-EU case studies: leading investors in agricultural R&I

Insights from non-EU countries

- Growing expenditure on agricultural R&I (global leader: China)
- Strategic approach and growing investments into RIIs and applied research
- Emergence of multi-actor platforms dealing with specific agriculture sectors / issues
- Strong mobilisation of private investments and blended finance
- Bilateral RIIs (e.g. China-Australia)
- High importance of new technologies (e.g. AgroFood-Tech ecosystem in IL)
- Strong ties with international R&I agencies (e.g. CGIAR institutes in IN)

Next step: launching the survey

To collect relevant and codified information on the already identified R&I infrastructures and set up an inventory of existing R&I infrastructures across EU.

MS									
Name R&I infrastructure									
Owner									
Type of R&I infrastructures	Applied Research Institutes (ARI)	Research Infrastructures	Experimental or Research Stations	Innovation Hubs (digital innovation hubs, agri-business parks)	Dissemination infrastructures and Repositories	R&I Networks and Clusters			
Funding	Public resources	Private resources	Public and Private resources						
Functions	Research	Education and training	Development and engineering	Technology transfer	Dissemination	Advisory	Public policy support	Others (…)	
Mission	Free text (description)								
Target	List of potential targets: Researchers, Advisory services, education services, farmers, civil society, public servants								
Type of knowledge flow	Knowledge co-creation	Knowledge circulation	Knowledge transfer						
Internet site & Contacts	www. ----	telephone number							
Headquarters	town code	address							
Context	Regional	National	European	Worldwide					

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Recommendations

- Improve collaboration between stakeholders
- Leverage PPPs and funding (public, private, blended)
- Invest into digitalisation and set up of large shared database infrastructures
- Foster transnational networking e.g. through dedicated RIIs H2020 calls
- Promote interdisciplinary RIIs focus to meet agricultural challenges
- Monitor progress of the RIIs developments in the EU
- Exchange knowledge with the non-EU countries

Thank you for your attention ☺

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