

Case studies for stakeholder-driven innovation

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Valérie

- Context: translating research and co-innovation
- The stakeholder-driven methodology
- Case study insights
- Conclusions



- Outreach and **translation of results into field practices** from EU and nationally funded research projects (agriculture and forestry) is limited
- The overall aim of VALERIE is to **boost the outreach of research** by facilitating the integration into innovative field practices

How do case studies contribute to these VALERIE objectives?

- **Review, extract and summarise knowledge** - from national, international and EU research projects in agriculture and forestry
- **Translate** “promising” research results into formats for end-users (farmers, advisers, supply chain, actors)
- Develop a **‘smart’ search engine** (*ask-Valerie.eu*) for research outputs, for use by farm/forestry community and link to EIP-AGRI platform’

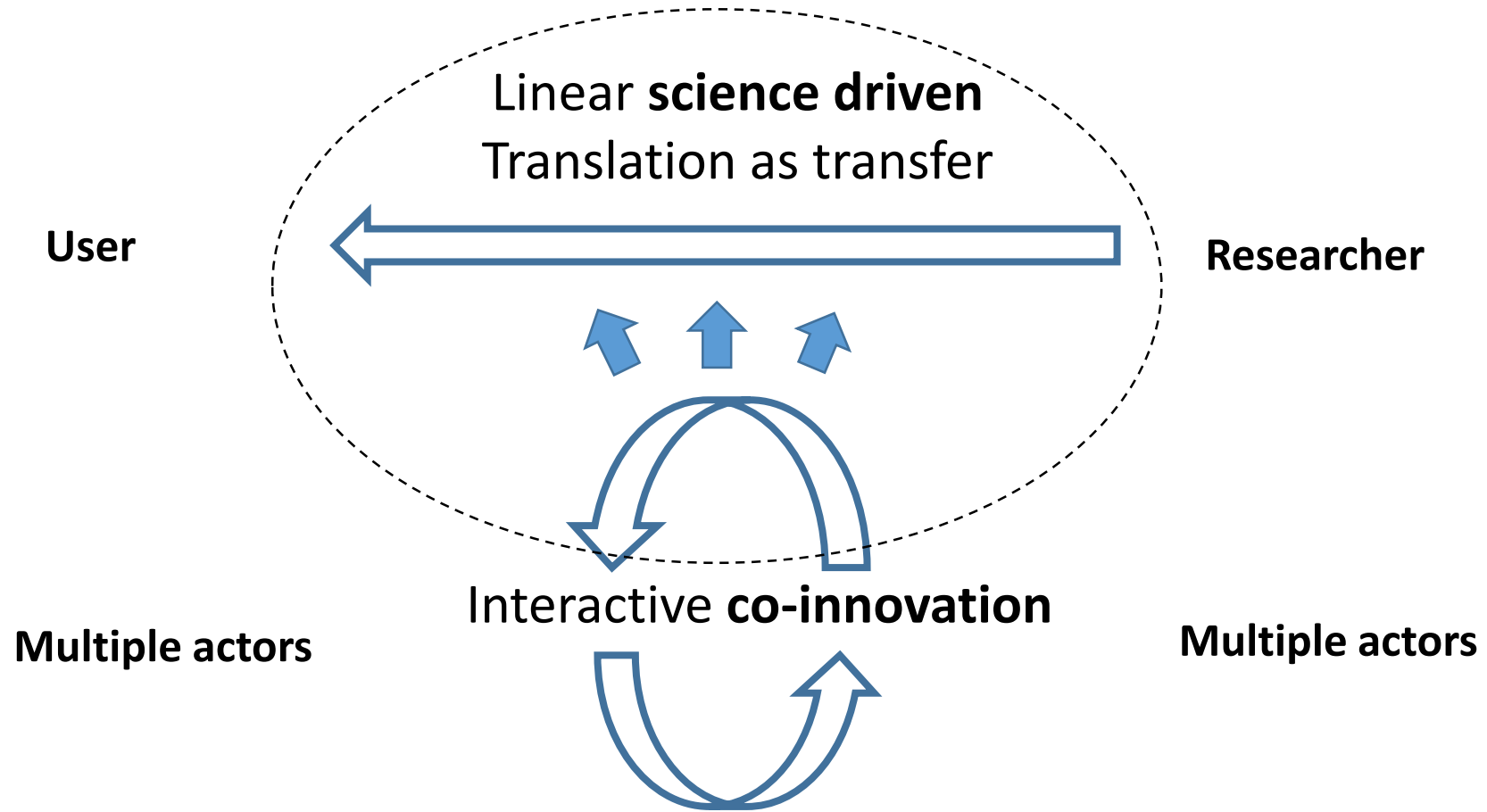
- **Translation** - turning knowledge into action
- **Science continues to be essential** for innovation but there are challenges in translating research into practice
- Achieving **translation** of research to enable effective deployment of innovative research is seen as an **essential part of the research and innovation process**
- Large amounts of available research material **untapped**
- Emerging interest in **translational research** –more emphasis on involving end-users in **innovative networks**

“Knowledge translation is the meeting ground between two fundamentally different processes: research and action. It knits them with communicative relationships”

Bennett and Jessani (2011)

- The **co-innovation approach** offers a mechanism to make research-based knowledge more accessible
- Co-innovation –a process that allows **multi stakeholder learning**, operates according to principles of **dialogue, reflection and iterativity**, built around **feed-back loops** between researchers and users, applied using participatory methodologies

Co-innovation to enhance translation of research



Stakeholder-driven methodology

**Thematic
driven**

Extract knowledge for innovation

- Extract, screen, summarise
- Create knowledge base for *ask-Valerie.eu*
- Identify gaps

Create data infrastructure

- Themes structure the extraction
- Structured vocabulary

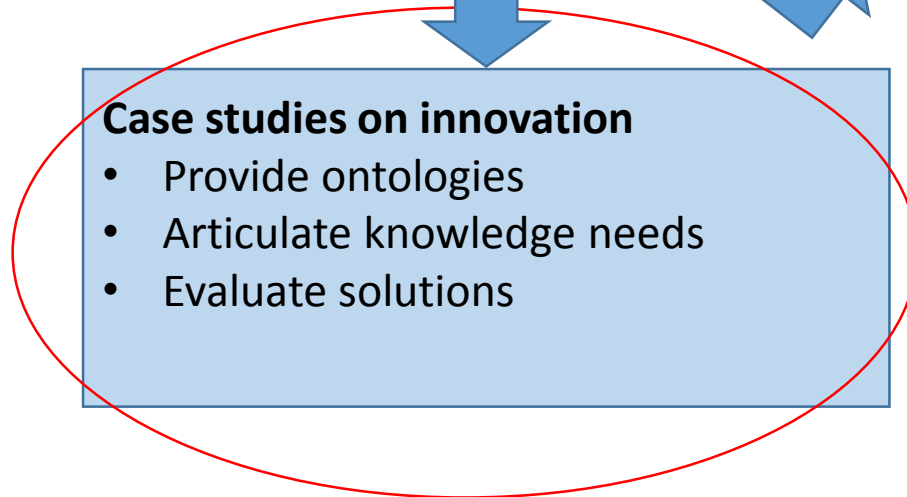
Ontology

Case studies on innovation

- Provide ontologies
- Articulate knowledge needs
- Evaluate solutions

Create smart search tool *ask-Valerie.eu*
Integrate into EIP NF

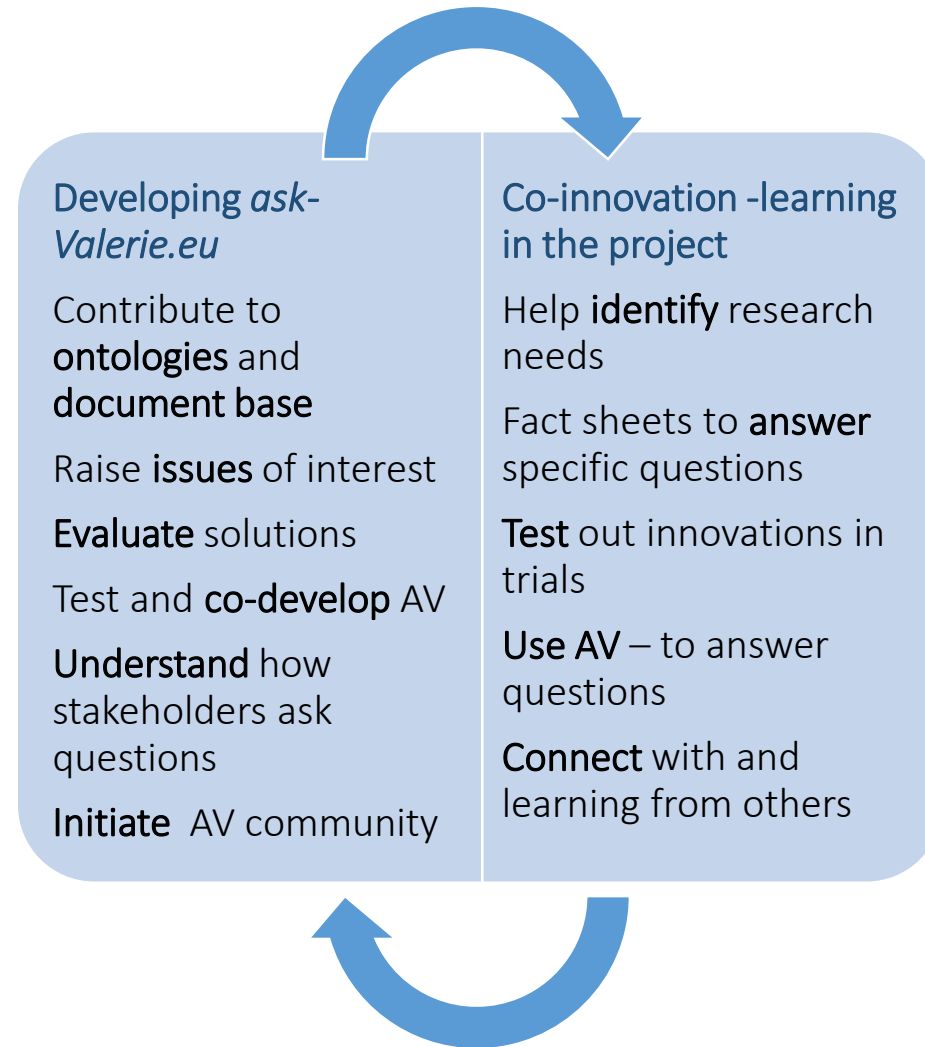
**Stakeholder
driven**



Stakeholder-driven methodology

- **solutions** derived from research need to be utilised and re-built on the farm with the involvement of relevant actors
- **iterative stakeholder-driven** methodology in 10 case studies
- **mobilises stakeholders** (farmers, advisers, foresters, supply chain actors) to:
 - -assess their **innovation demands**, screen and trial solutions, understand how stakeholders ask questions
 - -capture their knowledge for integration into **ask-Valerie.eu**, ensures ask-Valerie.eu is relevant to users

Stakeholder-driven methodology



Mobilises farmers to assess their innovation demands and capture their knowledge for integration into *ask-Valerie.eu*, ensures *ask-Valerie.eu* is relevant to users

CO-INNOVATION IN CASE STUDIES

Stakeholders
identify: list of
issues

Factsheets from
research outputs

CS evaluate
factsheets, test and
refine

CS create trial
leaflets

Issues, terms,
concepts
/relations ROC+
Translate concepts

CSP suggest and scan
100 papers

Suggest **repositories**
(different languages)

CSP **evaluate AV**
interface, community

The created tool and its pillars

Valerie



Valerie
ontology



Document base



Digital advisor
algorithms



User
community



Test and feedback:
Query editor
Snippets
Ranking
Language
Translation



Stakeholder-driven methodology

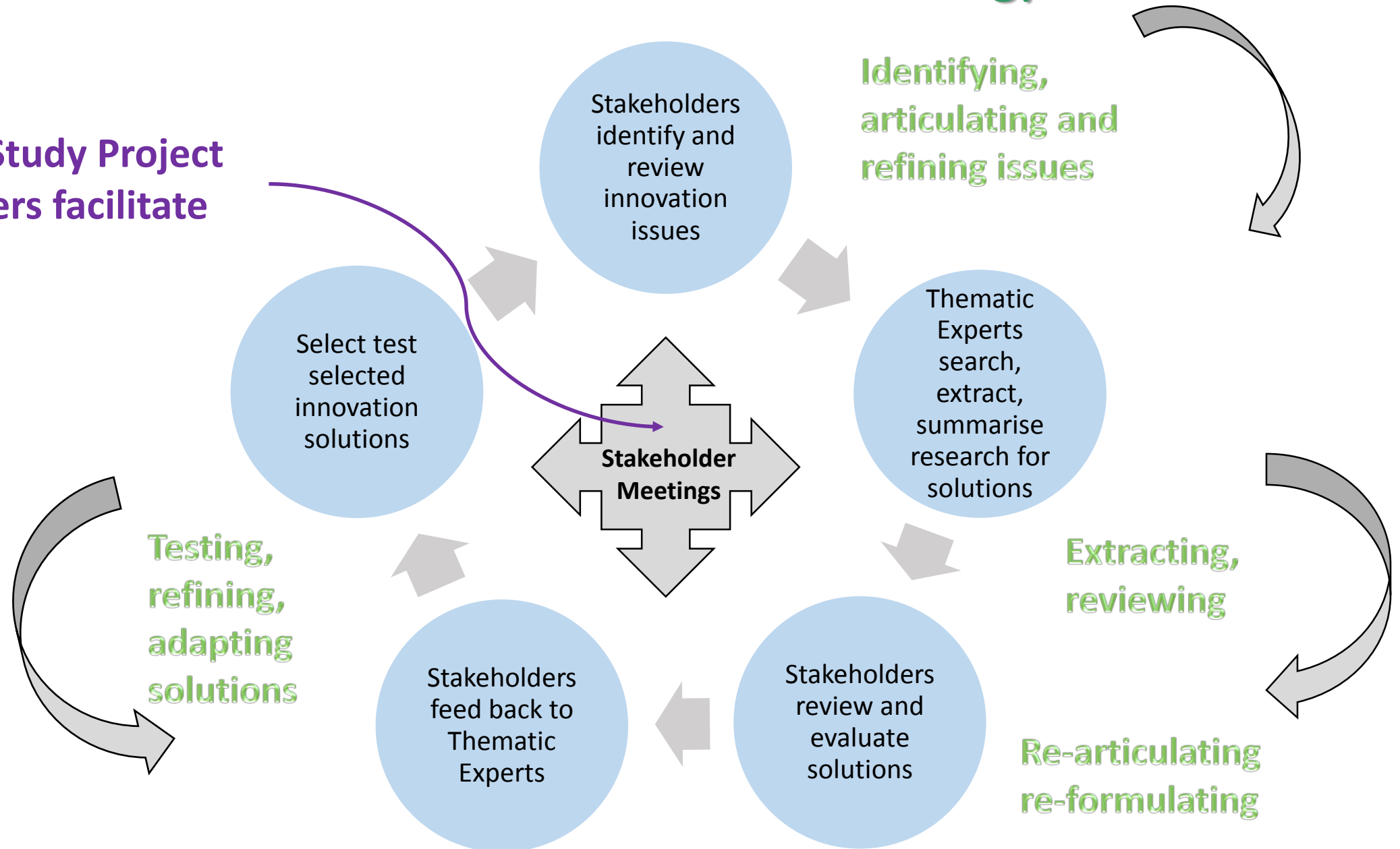
Series of **participatory meetings** with stakeholders in case studies facilitated by **Case Study Project Partners** using **Dynamic Research Agenda**

- Stakeholders identify **innovation issues** (research needs)
- Scientists (Thematic Experts) search and retrieve 'best matching' information -**innovation solution**
- Scientists **translate science** into 'end user format' (Research Fact sheets summaries)
- Stakeholders **review** Fact sheets and **feedback** to scientists
- Stakeholders **screen** information- assess viability with trials – **adapt** innovation and feedback



Stakeholder-driven methodology

Case Study Project
Partners facilitate



Case study: Sustainable potato supply chain



The potato production in Poland for the French fry industry in the Netherlands. Supply chain SHs - growers, processing and exporting industry, suppliers of seeds, fertilisers and pesticides, extension service and research

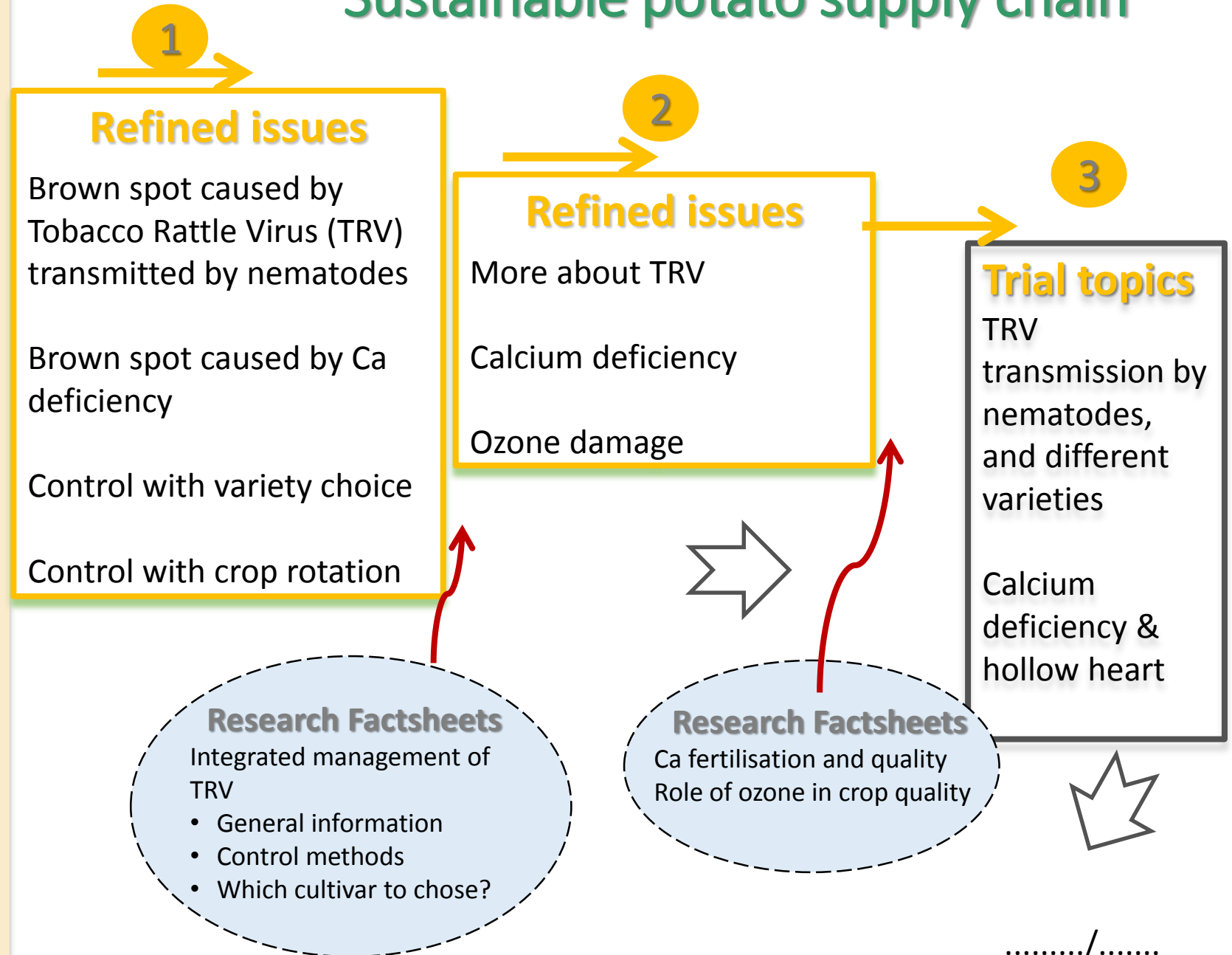
Key quality issue- potato quality.. cause problems in processing of french fries



Innovation issues

- Internal brown spots in potato tubers, variety specific.
- Grey discolouration of french fries after processing
- Early dying of potato crop, variety Innovator
- Sprouting of Innovator in store
- Pathogen *Rhizoctonia solani*
- Hollow hearts in tubers
- Skin set after haulm killing in seed potatoes
- Bacterial wilt in seed potatoes
- Misshaped tubers, tuber length, frying index

Sustainable potato supply chain



Innovative Arable Cropping



The Berry arable farmers group, central France, active since 2005, with the help of an agronomist developed different cropping techniques (e.g. tillage and legumes)

They are addressing issues of decreasing or stagnating yields linked to short rotations and simplified tillage which creates soil problems



Meeting 1 issues

Farmers questions

- Rapeseed drilling associated with which leguminous crops?
- What are the proper drilling techniques for **our region** ?
- **How to succeed seeding/drilling** in a covered soil?
- Using **strip-till** for better soil structure?
- **Which crop** should be added to the rotation to improve its sustainability ?
- How to manage **intercropping**?
- **Cash crop or intercrop**?
- Would it be beneficial to maintain **permanent soil cover**?
- Can good drilling limit the impact of pests?
- Has the intercrop impact on **pest management**?

1

Refined questions

- What are the effects of agricultural practices such as **direct sowing, cover crops and soil tillage** on **the nitrogen and organic matter cycles and availability**? “
- “What does influence (trigger) the end of dormancy i.e. the **germination of the weeds** ?”
- “How can we evaluate in the field the **properties of the soil** (structure, texture, “health”)? What are the possible **evaluation methods** ?”
- “How can we **best drill (sow)** a crop through a soil cover (soil covered by a crop or crop residue)?”
- “What are the practical impacts of the use of existing **alternative** plant controls and protections?”

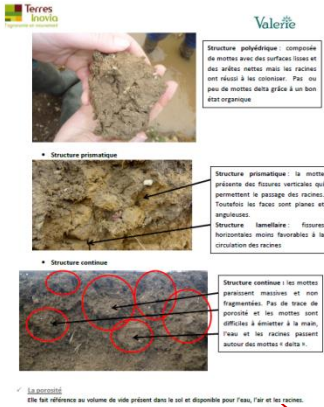
2

Trial topics

Rapeseed, wheat and protein crop plots , according to farming practices :

- **direct sowing**
- **cover crops**
- **≠ land tillage**
- **association of crops**
- etc.

Research Factsheets
Agronomic techniques



Meeting 1 issues :
Farmers & refined questions

3
FIELD TRIAL (May 2016)

Soil structure evaluation guide

Quick, visual & descriptive assessment
(simplified spade test)

2
Trial topics

Rapeseed, wheat and protein crop plots, according to farming practices :

- *direct sowing*
- *cover crops*
- *≠ land tillage*
- *association of crops*
- etc.

Revised trial proposals and actions

7 to 10 farmers meet

Observations & recordings

4 key periods

- 1- **Soil structure** : end of spring (June 2015, May 2016)
- 2- Crop residues : fallow period
- 3- Crop growing structure, density (mid-Sept to mid-oct 2015; 2016)
- 4- Evaluation of quality of roots (length; biomass) in winter (mid-Nov. to February 2015, 2016)

4
Innovation solution
Decision support system (in 2017)
Based on 4 steps

- 1- **Parcel** characteristics & recent history (weed, pest risks etc.)
- 2- Field assessment (**soil structure, residues,**)
- 3- Decision-making (use of **innovative practice ?**)
- 4- Assessment of the success

Research Factsheets
Visual soil Assessment



Innovative Arable Cropping

Progressively constructed a set of new specific questions focusing in on soil assessment

A **Decision Support Tool** -a step by step guide to establishing oilseed rape that can be easily conducted by farmers themselves

With an in-field method to assess soil quality



Structure polyédrique : composée de mottes avec des surfaces lisses et des arêtes nettes mais les racines ont réussi à les coloniser. Pas ou peu de mottes delta grâce à un bon état organique

• Structure prismatique



Structure prismatique : la motte présente des fissures verticales qui permettent le passage des racines. Toutefois les faces sont planes et anguleuses.

Structure lamellaire : fissures horizontales moins favorables à la circulation des racines

• Structure continue



Structure continue : les mottes paraissent massives et non fragmentées. Pas de trace de porosité et les mottes sont difficiles à émietter à la main, l'eau et les racines passent autour des mottes « delta ».



Conclusions: Stakeholder-driven methodology

Mobilises farmers to assess and address their innovation demands and capture their knowledge for integration into ask-Valerie.eu

ask-Valerie.eu is developed with user input – suited to users' needs



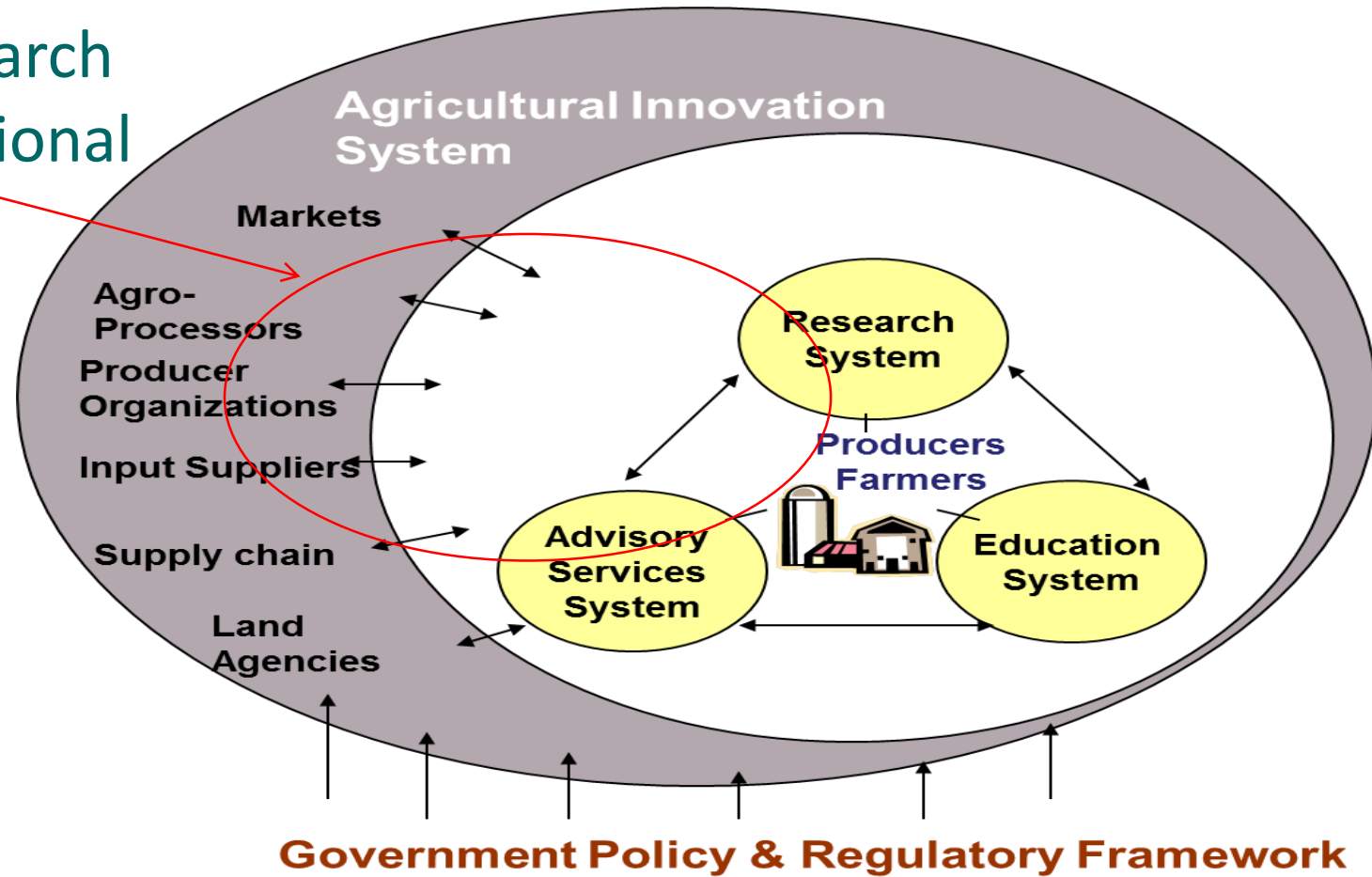
Co-innovation -combines stakeholder experiences with utilising existing research outputs

Assumption that stakeholders articulate concrete research questions and science provides immediate solutions is **simplistic**– requires continued **dialogue, repeated interaction and problem analysis**

Translation processes- identification, prioritisation, articulation, evaluation, searching, extraction – refining, testing -stakeholders progressively construct a set of specific questions and test solutions

A transferable model for translating research

Co-innovation
multi actor research
projects, operational
groups



Modified from Birner et al. 2006

The Valerie project has received funding from the European Union's **Seventh Framework Programme** for research, technological development and demonstration under grant agreement no 613825.

ask-Valérie.eu

