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# Envisioning the contribution of extension work to the transition towards sustainability in agriculture and within rural areas.

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# Road map....

1. A diversity of AKIS in EU : a need to contextualize the contribution of extension work
2. Transition towards sustainability in agriculture : supporting system innovation or/and transformational change ?
3. An activity-based perspective on extension work and its organization to analyze its contribution to transition towards sustainability
  - Which organization to boost farmers' involvement in exploration processes at a large scale ?
  - Which skills to develop and how to achieve this ?
  - Some examples from France
4. Conclusion : work still in progress!



# 1. A diversity of AKIS in European Union : context dependency



**Visit the Website : [www.proakis.eu](http://www.proakis.eu)**

- Flyers available in English, Polish and Portuguese
- Deliverables, Posters and Country reports
- Inventory – searchable database available



The screenshot shows the PROAKIS website header with the title "Prospects for Farmers' Support : Advisory Services in European AKIS (PRO AKIS)". The navigation menu includes "About", "Objectives", "Partners", "Publications and events", "Contact", and "Login". A search bar is present with the text "search...". Below the navigation is a large image of a sunflower field. The "About" section contains the following text:

**About**

In times of changing conditions, with strong pressure from markets and citizens to adjust and innovate, farmers need timely access to knowledge & information, to training & education, and to facilitating & supporting services.

**PRO AKIS aims to answer the following question:** How and from what sources can farmers get reliable & relevant knowledge, as well as orientation & support, in order to continuously evolve, to successfully solve problems, and to respond to external expectations & development opportunities?

Agricultural knowledge & information systems (AKIS) describe the exchange of knowledge and supporting services between many diverse actors from the first, second or third sector in rural areas. AKIS provide farmers with relevant knowledge and networks around innovations in



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# 'AKIS' in the PROAKIS Project : what do we mean ?



- Describing knowledge infrastructures (Klerkx *et al.* 2012);
- Chosen perspective
  - Central role given to the analysis of agricultural advisory services (Assefa *et al.* 2009);
  - Focus made on the issue of knowledge access for a diversity of actors (Hall *et al.* 2006)
  - Looked at a national or regional scale (inventory for EU 27 member states).

Labarthe et al. 2013



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# Characterisation of European AKIS in 2013 (1)



Fragmented

Integrated



NO	Coordinating structure(s)	YES
NO	National AKIS or/and advisory policies	YES
NEGATIVELY RATED	Linkages between various actors	POSITIVELY RATED

NO	Predominant institutional actors	YES
NO	Availability of (public) means	YES
FEW	Farmers being reached by advices	HIGH

Weak

Strong/powerful



# Characterisation of European AKIS in 2013 (1)



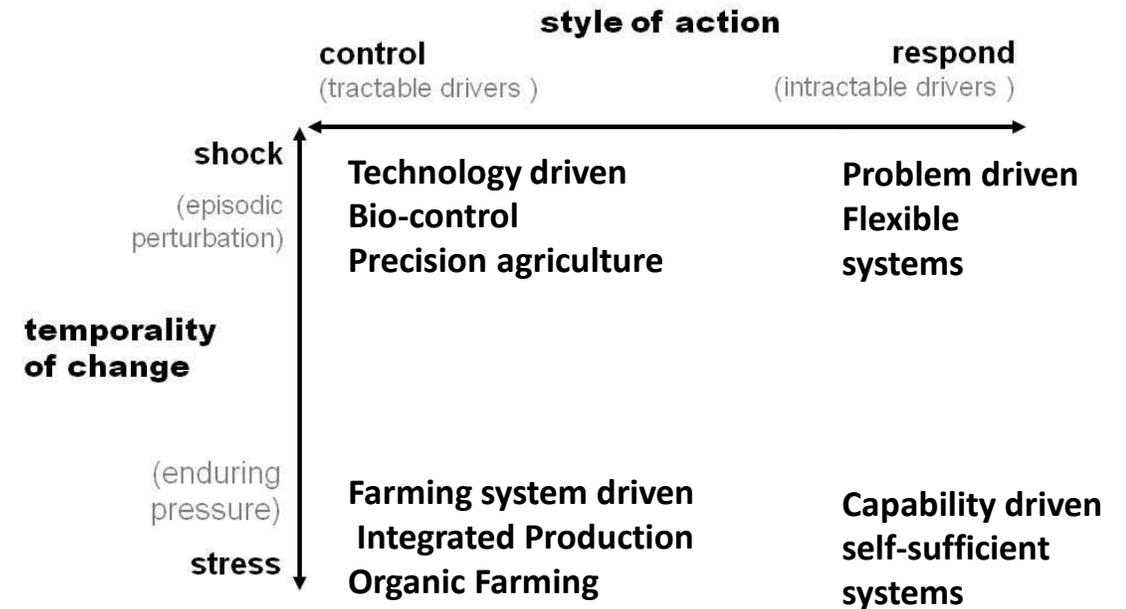
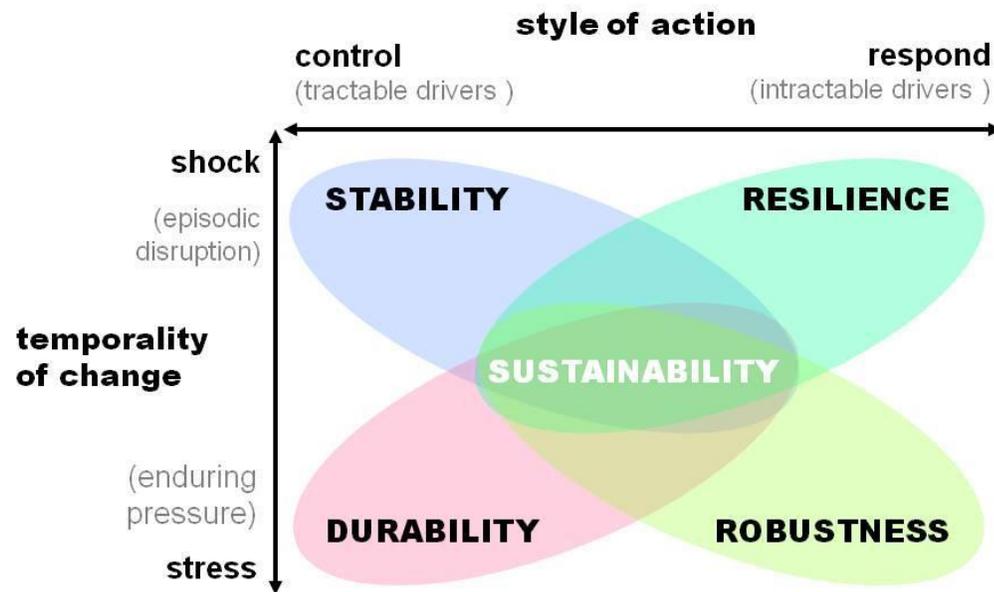
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## 2. Transition towards sustainability in agriculture : supporting system innovation or transformational change ?



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# How do we frame sustainability ? which vision drives the innovation process ?



*Stirling, A., 2011. From sustainability, through diversity to transformation: towards more reflexive governance of technological vulnerability, in: A. Hommels, J. Mesman, and W. Bijker, eds., Vulnerability in Technological Cultures: New Directions in Research and Governance MIT Press, Cambridge, MA.*

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# System innovation or/and transformational change ?

## System innovation and transition towards sustainability :

- a more socio-technological system perspective?
- Emphasis put on networking activities between organizations
- Innovation brokers : support other organizations to innovate: helping to provide information about potential collaborators; brokering a transaction or acting as a mediator between two or more parties; helping find advice, funding and support  
(Klerkx and Leeuwis, 2009 ; Howell, 2006)

## Transformational change towards sustainability :

- a more socio-ecological system perspective ?
- Emphasis put on deliberative arenas among stakeholders
- Intermediaries support co-evolution of problem formulation, transformative intention building, and means of action : creating/facilitating deliberative arenas, acting as a translator among different social worlds, helping to build shared vision  
(Smith & Stirling, 2010 ; Steyaert et al. 2014)



### 3. An activity-based perspective on extension work to analyze its contribution to a transition towards sustainability

#### Some examples from France



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# Some assumptions which guide the analysis

- Transition, at farm level, can be addressed by designing new farming systems
- Such design is done according to a given « political narrative » or transformative intention
- Design and use of new farming systems are two faces of the same coin
- Design of new farming systems is often highly distributed among various organizations
- Extension workers involved in supporting a transition towards sustainability are facing changes in their work situations which require to develop new skills

NEED TO SUPPORT THE DEVELOPMENT  
OF NEW INQUIRIES FOR ADDRESSING  
THE DIVERSITY OF SITUATIONS



NEED TO ANALYZE DESIGN AND USE  
RELATIONS

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# A framework to give account of various organizational and institutional arrangements for design-use relations

The framework is adapted from an « On Line Community Model » (Barcellini et al., 2008)

- What is the transformational intention ?
- Who are the main players in the development of this intention?
- Which are the discussions spaces or arenas in which this transformational intention and the means to implement it in a designed artefact are discussed ?
- Who are the participants which assume certain roles (champion, boundary spanner, developer,..)
- What are the formal and informal rules which organize the collective activity
- How do the participants enable peripheral participation and involvement of new comers ?



# Design-use relations in various communities engaged in less pesticide dependent farming systems

A national Plan : Ecophyto 2018 which resulted in various actions. In 2010 the Ministry of Agriculture funds the creation a network of 2000 farms. But other networks already existed, and contributed also to the design and the use of less pesticide dependent farming systems

	DEPHY Farm	RAD-CIVAM	BASE
<b>What is the transformational intention ? Who take part to the debate around it ?</b>	Achieve to reduce the use of pesticides (50% in 10 years) at cropping system level; Each group locally reworks the intention. Some groups have been built so that the farmers involved can foster debates about the intention in other local arenas.	Achieve a thrifty and less dependent (from agrobusiness, for decision-making) agriculture. The intention is discussed with the Ministry of Agriculture and the incumbent regime players in order to transform the specifications in a agri-environmental measure (system level)	Improve the soil life (no tillage, conservation agriculture). The intention is debated among those who point the use of glyphosate and other herbicides in the no-tillage systems.
<b>Who are the main players</b>	incumbent regime players (research, applied research, cooperatives and chambres of agriculture). <b>Gouvernement led initiative</b>	Farmers'group who subscribe to popular education principles. <b>Farmer led initiative</b>	Farmers initially supported by Monsanto but independent since 2006. <b>Farmer led initiative</b> with the support of experts promoting no-tillage and direct sowing
<b>Size of the farmer network</b>	2000 farms, group of 10 farms supported by an extensionist (1/2 time, 2/3 are employed by chambres of Agriculture)	50 arable farmers involved in a design project with 5 facilitators employed by CIVAM, around 2000 affiliated to the association	Around 2000 farmers affiliated to the association.
<b>When did it start ? How is it funded ?</b>	2010. Taxes on pesticides. Large amount of public funds	2008. Project based funding. Mainly public funds for innovation or adult training (	1992. Mainly funded by the farmers themselves.

# Design-use relations in various communities engaged in less pesticide dependent farming systems

	DEPHY Farm	RAD-CIVAM	BASE
<b>Nature of the involvement in a design project</b>	Voluntary. Contractual agreement with the State (at farmer and service provider levels) for data sharing and farm visit. Assessment of the project by an independent committee	Voluntary. Contractual agreement of the farmers with the association for data sharing and improvement of specifications at cropping system level	Voluntary. A need to be committed to the transformational intention. Militancy? Any farmer can contribute to propose new ideas in order to improve soil life and soil conservation
<b>Design project level</b>	Each farmer with no real common artefact shared at group level, but the group gives support to design and to implement the cropping system	the 50 farmers share the need to improve the specifications, but each is committed to experiment its on-farm feasibility	Ad-hoc organization of farmers who are interested in implementing (experimenting) some new ideas (ad-hoc experimental platform)

What is produced

specific cropping systems  
proving a reduction in  
pesticides use

specifications  
for environmental compliance

principles for  
conservation agriculture

Design-use relations are supported by different rules in each case

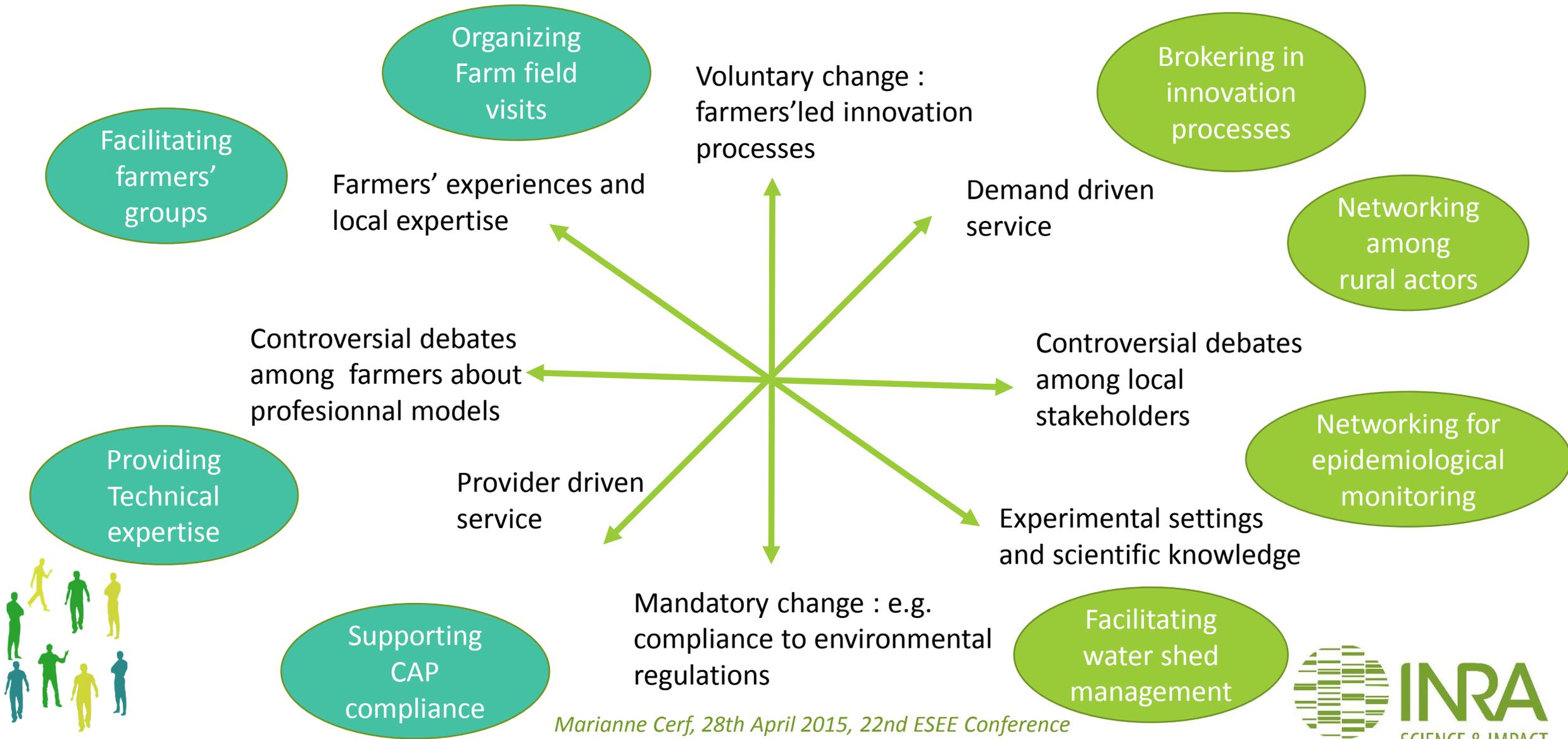
While voluntary engagement is a common feature, a contrat can specify what has to be done to contribute to a shared artefact (or generic features of the artefact)

# Design-use relations in various communities engaged in less pesticide dependent farming systems

	DEPHY Farm	RAD-CIVAM	BASE
<b>Discussion spaces</b>	Local discussion space (mainly groups) but the whole network and the national core team is also involved in discussion to identify "good systems". <i>This is driven by statistical analysis combined with local expertise but mainly data driven</i>	Local group, project level, and government and EU-led discussions. <i>Experience driven but data are collected and analyzed to prove the relevance of the specifications.</i>	The network mainly exchange through a magazine and a website in which farmers give account of their trials (success stories, failed tentatives) and experts provide some general principles to support the local exploration and trails. <i>Exploration driven</i>
<b>Specific roles (champion, boundary spanners)</b>	Champion : the local facilitator can promote a given designed cropping system in order to implement it as a "reference system". Boundary spanner : any farmer or local facilitator can act as a boundary spanner with local farmers and extension organisation but mainly <i>bridge from inside the network to outside in a communication way</i> rather than invite peripheral participation to the network.	Champion : mainly the project leader who sought for funds, but also a core group of farmers who advocate the need to develop the specifications and to transform them into an agri-environmental measure. Boundary spanners : <i>local facilitator and/or farmers who support peripheral participation of other farmers (to include them in the group) or of some experts.</i>	Champion : mainly the member of the core team of the network as they promote new ideas within the network to create experimental platforms. Boundary spanners : <i>the network does not really seek for new comers, but local associations or annual meetings are open and give opportunities to join. Participation becomes more active when farmers contribute to a platform, exchange on the website, and give account of their experience in the magazine.</i>
<b>What did they achieve regarding the reduction of pesticides</b>	Hardly achieve any reduction. To be looked carefully as there is a high variability between productions and regions.	The specifications enable the farmers to comply to the 50% reduction of pesticides and to comply to other environmental regulations (arable cropping systems)	The reduction of pesticides is not really their driver. Nevertheless, since 2006, increased attention is payed to this problem and many explorations taken over in the other networks are done by the farmers who develop conservation agriculture

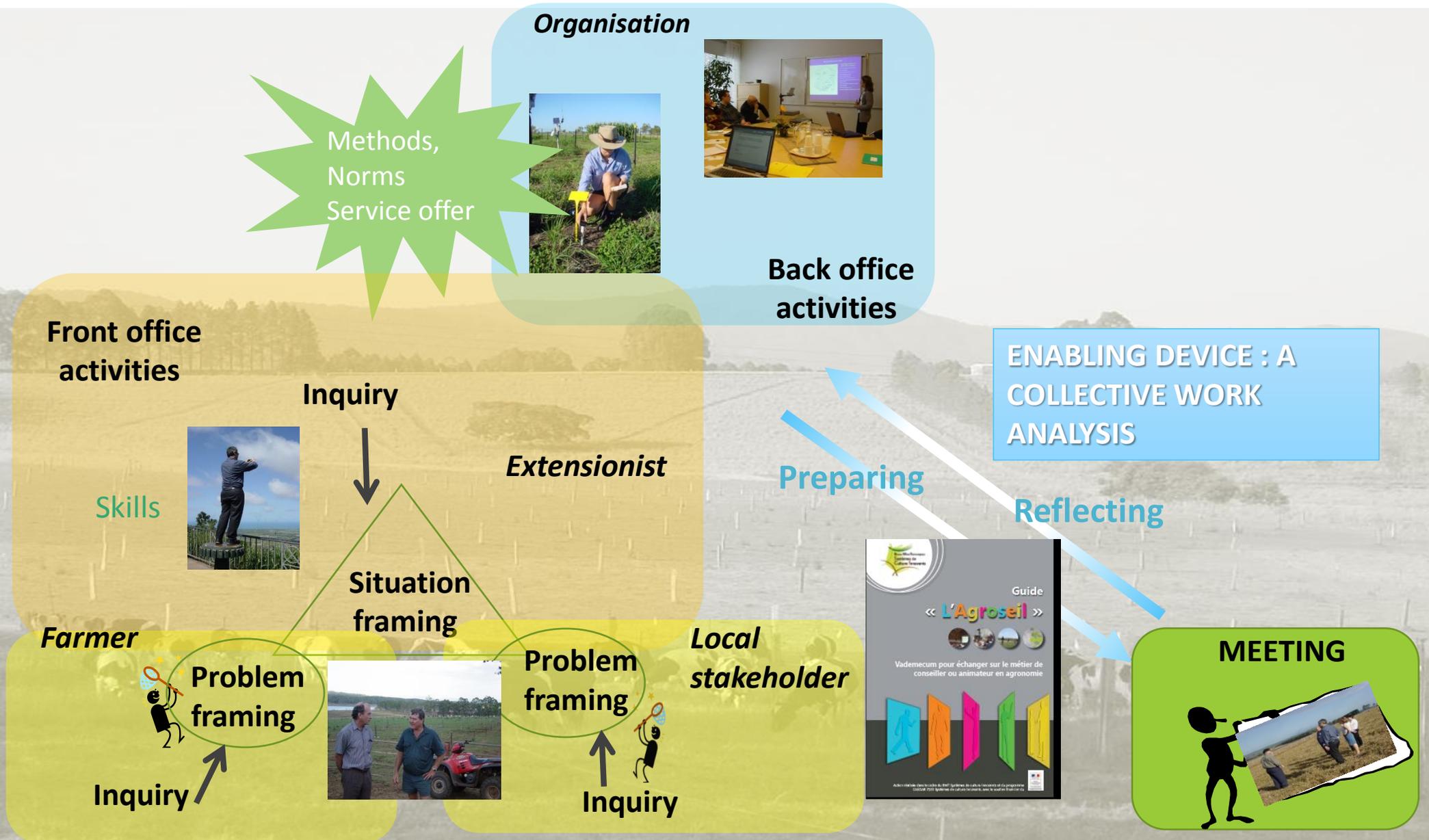
Discussions are not organized around the same kind of knowledge and the network is more or less inclusive...due to a distinctive way of building the design-use relation :  
 prove the relevance/feasibility or invite to exploration

# Extension work: an increasing diversity of situations



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**LOCAL CONTEXT**



A developmental activity-based approach of extension work

# Enabling extensionists to develop their ability to support farmers in experiencing new farming systems

## ENABLING DEVICE : A COLLECTIVE WORK ANALYSIS

- Collective reflexive analysis of current practices to step out from embedded practices related to « old situations » : becoming aware of normative framings
- Collective analysis of disturbances occurring in new situations to build new capabilities : exploring contradictions in the activity system
- Collective design of new professional resources (cognitive, symbolic, material) : building new inquiry rules and abilities.



# Conclusion

Proposal 1 : To contribute to a transition towards sustainability extensionists need to reflect upon institutional and organizational arrangements which support design-use relations and to identify how they contribute

- to support both exploration and implementation of transformative intentions while support
- To discussion spaces in which this transformation intention is debated
- To enable new comers to participate actively to the exploration-implementation processes

Proposal 2 : Discussion spaces among extensionists based on work analysis and experience sharing are useful to enable extensionits to develop new enquiries in order to be efficient in a high diversity of front office situations.

Proposal 3 : There is a need to reframe the back office work : less experiments more scientific monitoring : less ready-to-apply solutions, more guidelines for exploration ?



# Thank you for your attention



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