AGRICULTURAL KNOWLEDGE: LINKING FARMERS, ADVISORS AND RESEARCHERS TO BOOST INNOVATION

AGRILINK'S MULTI-LEVEL CONCEPTUAL FRAMEWORK

THEORY PRIMER: **4) CONCEPTUALIZING CHANGE IN ADVISORY PRACTICE**

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AgriLink

Agricultural Knowledge: Linking farmers, advisors and researchers to boost innovation.

AgriLink's multi-level conceptual framework

Theory primer: 4) Conceptualizing change in advisory practice

The elaboration of this Conceptual Framework has been coordinated by **The James Hutton Institute**, leader of AgriLink's WP2.

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This document presents the multi-level conceptual framework of the research and innovation project AgriLink. It is a living document.

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It has gone through a transdisciplinary process, with implication of both practitioners and researchers in writing, editing or reviewing the manuscript. This participation has been organised within AgriLink's consortium and beyond, with the involvement of members of the International Advisory Board of the project, including members of the Working Group on Agricultural Knowledge and Innovation System of the Standing Committee on Agricultural Research of the European Commission.

Theory Primers

The purpose of the primers is to provide AgriLink consortium members with an introduction to each topic, which outlines the key points and identifies options for further reading. The primers have also served to demonstrate the wide range of expertise in the consortium, and to highlight the specific research interests of consortium members. Primers are intended to act as a **foundation for academic journal articles, and an early opportunity for collaboration between consortium members**.

4) Conceptualizing change in advisory practice

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1.0 General Overview of the Theory or Approach

1.1 Summary of the Theory, Approach or Topic

Change in advisory practice can either be addressed at the level of the relation between a farmer and or at the level of the advisor collective (e.g. those sharing some professional norms) or at the level of the organization (in line with new business models) or even at the policy level (how are some advisory practices institutionalized). Up to now, I have not seen any approach or theory which embrace these different levels in a unique framework. While organizational learning and activity theories and more generally practice-based approaches can offer some theoretical backgrounds if one conceptualize change from a learning driven perspective, evolutionary economics and innovation studies can also offer some theoretical backgrounds from a more efficiency driven perspective may be. Below, I will not develop all the different theories and approaches also I try to give a flavour of each at first. I will mainly develop activity approaches, but even in this area it is difficult as there are different lanes. Finally, I do not refer to formal or informal training and theories related to them and to skill development, also this can be a way to conceptualize change in advisory practice, e.g. change is supported by training advisors. Referring to activity theories, organizational learning or to innovation studies do not mean that training is not an issue, but it is only one among other resources which can support change in advisory practice.

1.2 Major authors and their disciplines

Organizational learning: Argyris and Schön (in the 80's) and Gerardhi and Niccolini (in the 90's). The later have developed a scientific community OLK which recently merge with the OKLC community (http://www2.warwick.ac.uk/fac/soc/wbs/conf/olkc/). Learning issues are key to conceptualize change and different learning loops (first, second and third order) are considered to discuss how change occurs in practice within and between organizations. Mainly management scientists but also some economists and some sociologists who recognize themselves as belonging to the "organization studies" community (European Group of Organization Studies for example, EGOS Conference). See also primer from Chris and Engil? Situated learning issues are related to this field (Lave and Wenger with the notion of Communities of Practice)

Social learning and system thinking : see theory primer from Chris (theories of learning and knowledge) and form Andy (complexity and systems)

Activity theories: There are quite different theories. Some are related to situated action (Schuman, 1987) and cognition (Hutchins, 1990), some to the pragmatism (Dewey, James) while others are grounded in the Russian tradition (referring to Vitgosky and Leonti'ev work, see for example Engeström, 1988 ; Clot, 2000) or in the francophone ergonomic approach (Leplat and Cuny 1977 ; Rabardel, 1995). please also comment on the scope of the theory or approach (i.e. is it specific to a few authors, or is there a wide body of literature on it, and if so,

in what disciplines). Change is not necessarily a key issues in some of these approaches. Engeström speaks of expansive learning cycles of systems of activities, which are related to contradictions within the elements of the system (4 different levels of contradictions). Clot also conceptualize change as the result of contradictions between 4 different components of a job : the historical component (how the job evolve in the past of the organization), the prescriptive component (what is currently "to be done" as defined by the organization), the collective component (what the professionals collectively define as what has to be done, the collective norm so to say), and the personal component (what the individual consider as the right way to perform the job). At individual level, this is revealed by tensions between what is done, what the individual would have like to do, consider s/he should do, s/he could do. Here mainly psychologists, ergonomists, education scientists. Cultural and Historical Activity Theory (CHAT) as a community, but also the francophone ergonomic society. Change is mainly conceptualize as developmental processes (e.g. finding ways to overcome (individually but also collectively and eventually at the level of the organization) the contradictions which will result in the development of a new practice (activity).

Innovation Studies: Unclear for me at this stage the extent to which practice is a relevant concept for those referring to innovation as a driver of change whether it be technological or more organizational and institutional innovation.

1.3 Key references

Still to be identified (overview papers). Mainly books!!

1.4 Brief history of how the theory has developed and been applied

Organizational learning : see Primer 20 (Strate and Blackmore)

Activity theories: They were first developed to give account of how individual and collective human action in and on its environment.

Cultural and Historical Activity Theory, have developed to address organizational and technological innovation issues and then to address inter-organizational or more networking processes then those which were addressed in a first version of the Engeström triangle representing the activity system through various mediations between a subject –individual or collective- and a object (to be understood as a purpose and a motive rather than as a physical object). Mediation through tools (language and other cultural tools, material tools) and through the collective of work, the division of work and the rules of work within the organization. Such a framework is "used" for developmental intervention (Virkkunen). Such interventions have been carried out in various organizations and inter-organizational settings and some took place in the agricultural sector (Seppännen in organic farming, Perreira-Queyrol in the pig sector, Väninen in the horticulture sector, Prost in the wheat breeding inter-organizational setting for example). It has been applied to service delivery but not necessarily (as far as I know) to agricultural advisory organizations.

French ergonomists have specifically developed the activity approach in order to point out the difference between the task and the activity. Metaphorically, we can say that, it the task (given by the manager in an organization) is the music partition, the activity is the interpretation of the partition and such interpretation is always required and new due to the specific circumstances (internal to the individual, or external to him or her) while activity is performed. They then distinguished between productive activity and constructive activity as two face of the same coin (Rabardel and Samurçay) to point out that while performing a given activity in order to reach a productive goal (such as providing a service for example), individuals develop their own skills, tools (e.g. learn, change their tools to make them more relevant to their own activity) but also to point out that constructive can be "destructive" (e.g. individual are not able to perform their activity in a manner which they feel comfortable with, and develop strategies

to cope nevertheless with what the situation requires, resulting in stress, lack of abilities, etc.). Change therefore means adapting the working conditions to reduced destructive effects and to support adequately the advisor activity (e.g. which will not be in contradiction with the goal, the motive of the activity, will support the advisor in being efficient and will not affect his well-being and health) on one hand, and also to create enabling environments (e.g environments which support constructive activity). Few studies in the agricultural sector (see some of Cerf et al. work) address whether to change advisory work in order to support farmers in their transition towards agro-ecological practice and see Chantre et al. (2015) or Coquil (2014) who analyse how farmers achieve changes from conventional to more environmental-friendly practices).

Pragmatic approaches put forward the role of experience and inquiry in the coupling between the human and his/her environment, while situated approaches mainly point situation awareness. They are critical about approaches which consider human from an information processing system (such as in substantive or procedural decision making or problem solving approaches) and critical about the role played by plans in human action. Practice emerges from the coupling between the human and its environment so to say (but I am not so sure that the term “practice” is actually core in their work.) As I am less familiar to such approaches, I am less at ease to say anything about their evolution. They are applied in a wide range of work whether to analyse coordination in action (Boltasnki and Thevenot for example) or to analyse how individuals cope with innovative technologies, or develop their experience (Mayen). Such approach has been used to analyse advisory practice (at least see Guillot, 2015).

2.0 Application to the analysing the role of farm advisory services in innovation

2.1 Relevance to AgriLink Objectives

[tick relevant]	AgriLink Objectives
X	Develop a theoretical framework utilising a multi-level perspective to integrate sociological and economic theories with inputs from psychology and learning studies; and assess the functions played by advisory organisations in innovation dynamics at multiple levels (micro-, meso-, macro-levels) [WP1];
X	Assess the diversity of farmers’ use of knowledge and services from both formal and informal sources (micro-AKIS), and how they translate this into changes on their own farms [WP2];
	Develop and utilise cutting edge research methods to assess new advisory service models and their innovation potential [WP2];
	Identify thoroughly the roles of the R-FAS (regional FAS) in innovation development, evaluation, adoption and dissemination in various EU rural and agricultural contexts [WP2];
X	Test how various forms of (national and regional) governance and funding schemes of farm advice i) support (or not) farmers’ micro-AKIS, ii) sustain the relation between research, advice, farmers and facilitate knowledge assemblage iii) enable evaluation of the (positive and negative) effects of innovation for sustainable development of agriculture [WP4];
	Assess the effectiveness of formal support to agricultural advisory organisations forming the R-FAS by combining quantitative and qualitative methods, with a focus on the EU-FAS policy instrument (the first and second

	version of the regulation) and by relating them to other findings of AgriLink. [WP4].
	At the applied level, the objectives of AgriLink are to:
X	Develop recommendations to enhance farm advisory systems from a multi-level perspective, from the viewpoint of farmers' access to knowledge and services (micro-AKIS) up to the question of governance, also recommending supports to encourage advisors to utilise specific tools, methods to better link science and practice, encourage life-long learning and interactivity between advisors [WP5];
	Build socio-technical transition scenarios for improving the performance of advisory systems and achieving more sustainable systems - through interactive sessions with policy makers and advisory organisations; explore the practical relevance of AgriLink's recommendations in this process [WP5];
X	Test and validate innovative advisory tools and services to better connect research and practice [WP3];
X	Develop new learning and interaction methods for fruitful exchanges between farmers, researchers and advisors, with a focus on advisors' needs for new skills and new roles [WP3];
	Guarantee the quality of practitioners' involvement throughout the project to support the identification of best fit practices for various types of farm advisory services (use of new technologies, methods, tools) in different European contexts, and for the governance of their public supports [WP6].

2.2 How this can be applied/developed in AgriLink

If I consider activity theories, I think that they can help in considering how farmers and advisors integrate new tangible and intangible tools to change their practice and how they are able to develop new practices.

It also can support the analysis of the interplay between front and back office work and how the whole organization support changes in advisory work (and by the way in advisory services, but by paying attention to the way such services are performed and not only how they are designed or can be made available to farmers).

It can help to better characterize how co-creation of knowledge and innovation happens without micro-AKIS.

It can be relevant to develop the WP3 methodology if WP3 is seen as a place to identify how enabling environments are created (living labs ?).

2.3 Research questions relevant to AgriLink

- How to support constructive processes and avoid destructive ones within advisor activity while creating advisory environments which are meant to increase relations among researchers, farmers and advisors (and other players?)
- How to create enabling environments within advisory organizations to support a collective of advisors in developing services in line with the diversity of farmers' access and use of services?

2.4 Methodological implications

- types of methods typically associated with the theory or approach : quite intense data collection through observation of work activity or methods of inquiry which enable the interviewee to recall what s.he really did in a given situation. Qualitative data collection and analysis. Need to reflect on what are the key work situation (e.g. those which can give information for a larger set of work situations).
- implications for specific workpackages (e.g. sampling, data collection, research questions)

May be to be used to develop a follow-up of some of the task of WP3. May be relevant in some WP2 task when in-depth analysis is seek for ?

2.5 Strengths and weaknesses/Sensitivities regarding use

Activity theories are practice-based approach and pay attention to the way people really perform the work rather than paying attention to what ought to be done. It also conceptualize change not only in relation to performance but also pays attention to sense making, to welfare. It pays attention to the interactions between individuals, professional collective and organizations in a change process. It has been applied already to advisory work in agriculture and other fields.

As it is a practice-based approach, it means in-depth inquiry rather than interviews out of work context. It might be difficult to use for people who are not familiar with it. It might be difficult to use it if little attention is paid to knowing and learning (knowledge as a process) and more attention is paid to knowledge as an asset, a stock..

2.6 Potential operational problems

(e.g. theories may be ‘vague’ and difficult to operationalise, they may require labour-intensive data collection, may require data that are hard to get, etc.)

See above questions about time consuming methods and difficulties to get used to the conceptual framework.