



# International workshop on System Innovation towards Sustainable Agriculture



To be held in Paris  
22 - 23 May 2014

**CALL FOR PAPERS - Closing 31 Jan. 2014**

<http://www.inra-ifris.org/activites/conferences/sisa-2.html>

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**The aim** of the scientific meeting is to bring research insights and practical experiences together and discuss these in-depth to form a basis for effective strategies (policies as well as others) to stimulate transition towards sustainable agro-food systems. The meeting will produce an overview of analytical methods, experiences and scientific insights of the main issues at stake in sustainability projects and programmes. By doing so, the meeting seeks to contribute to three goals, notably:

- Comparing and contrasting the issues and analysis of innovation and R&D practices governance in various European countries;
- Giving input to rethinking government policies, socio-professional strategies and civic concerns with the view to contribute to sustainable developments in the agro-food systems on the basis of existing research and experiences;

Defining the content and the agenda of a potential consortium for further research. Such research would have an analytical component (to analyse the relevant processes) as well as a

## Scientific and Organisational committee

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## The workshop and its follow up will provide the following outputs:

- An international meeting supporting the development of a research-policy network;
- 15 to 20 papers;
- Contributions by discussants and proceedings from two harvesting sessions;
- An edited book and/or a special issue of a scientific journal of the papers and discussions (provided that the quality of the contributions is sufficiently high);
- A policy report with the main findings of the workshop tuned in a Platform like white paper;

## Deadlines

Submission of abstract:  
31 Jan. 2014

Notification of acceptance:  
28 Febr. 2014

Full paper due: 9 May 2014

## Submission, Contact and further information:

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## Participation

### Invited participants

Participation is by invitation only. Participants will be selected on the basis of submitted abstracts. The format emphasises in-depth discussion and therefore only 15 to 20 papers will be selected. Participants without a paper will act as discussant at the workshop for one or two selected papers. Researchers, whose paper is rejected, may still be invited as discussant. Contributing postdoctoral colleagues are invited to present their research in the form of a poster in a poster session.

The invited participants will have a variety of disciplinary backgrounds such as Innovation Studies, Economics, Rural Sociology, Science & Technology Studies (including constructive and interactive technology assessment studies), Policy Studies (including studies of network governance, learning and the impact of regulation), Organisation Studies (including studies focusing on management of structural change and leadership) and Practices based Studies.

To stimulate 'fresh input' in the discussions a number of junior scientists (Ph.D students) will also be invited in addition to senior researchers. We also seek participation from policy-makers and representative of cooperative and professional networks (app. 5) to bring in their experiences and ways of framing insights.

### Format of the Meeting

The format of the meeting is meant to stimulate in-depth discussion of various issues rather than having many presentations and only brief discussions. To achieve this, the key features are:

- Plenary sessions only.
- Intensive interactions among a limited number of participants (30-35). All participants will have an active role, either as paper authors or discussants or both.
- Participation is by invitation only on the basis of submitted abstracts (for researchers) or known expertise (for policy makers).
- All papers are written and distributed prior to the meeting.
- Papers are not presented at the meeting but expected to be read beforehand.
- Invited discussants will present comments on papers to kick off the discussions. Two discussants are invited for each paper.
- The meeting consists of two kinds of sessions: 1) paper sessions focussing on a theme; 2) 'harvesting' sessions without a paper submission. The latter sessions aim at teasing out lessons for governance and to define a further research agenda. They will summarise progress made at the conference and develop a clearer view on issues to discuss further. To kick off the discussion in the harvesting sessions, two persons will be invited beforehand to present their conclusions from the preceding sessions.
- Poster session

Depending on budget: Local costs (hotel, subsistence) will be borne by the organisers. Funding applications to fund travel as well are still pending. Check website for progress on this issue.

## Background – The system innovation challenge

### *Pathways towards sustainability*

Over the past decade the transition towards sustainable agriculture has been a central theme in the work of many organisations, including government bodies, NGOs, professional organisations and research institutions. Various publications, including White Papers by the EU and different national governments, define future targets and objectives to improve sustainability in various subsectors like animal production, arable farming, or glasshouse horticulture. There are also growing concerns about the sustainable use of biomass for fuel, feed and fibres, which also became public issues in terms of ethical or economic relations regarding the multi-functionality of agriculture.

It has become clear that the development of our industrial societies has had serious negative effects. This is true for a variety of sectors including the agro-food system (including the production of food, feed, fuel and fibres, biodiversity conservation). Despite the adoption of the notion of sustainable development by most governments as a basic policy principle, it is becoming increasingly clear that the achievement of a 'post-industrial' society will not necessarily result in a more sustainable society, i.e. a society that is characterised by a better balance between economic, social and ecological goals. Ensuring that any transition, that might be taking place, does lead to more sustainability is a major challenge for societies in general and for agro-food systems in particular. In this context the relations between agronomic sciences, agricultural technologies and public or private expectations are at stake. Like in other sectors, this leads to claims for "responsible? innovation" concerning the purposes and ways of designing new technologies and practices or new practices in relation to existing techniques. In fact, these claims indicate a need for a shift in the governance of research and innovation to achieve a sustainable future (Elzen et al. 2012) meaning to transform innovation for sustainable achievements (Leach et al., 2012) and to anchor them (Elzen et al., 2012).

Nevertheless, the transition to sustainable agro-food systems will not be an easy or straightforward one. One of the reasons for this is the extremely complicated nature of the required long term societal changes. Such a transition will require to adjust in various ways the design, the development, the adoption and diffusion of new technologies to be embedded in new economic, social, institutional and cultural relations. This shall not operate in a linear way under any type of techno-centric groundings or policy-relevant justification, but rather through hybrid and path-dependant processes of change.

### *Dynamics of Innovation as a scientific issue*

Innovation is crucial for such a transition, which typically refers to technological change. Indeed, a variety of new technologies will be needed to meet the sustainability challenges in the various agricultural subsectors. Technological change, however, will not be enough. The enormous challenges ahead will also require new regulations, new behaviour (e.g. of consumers, farmers as well as many other stakeholders), cultural change, institutional change, and institutional 'hybridity' (Allaire and Wolf, 2004) as well as new forms of planning, monitoring and evaluation (van Mierlo et al. 2010). While some authors use the term 'system innovation' to denote such broad change processes (e.g. Elzen et al. 2004; Geels 2005), others develop the notion of innovative design (Lemasson, et al., 2006) in socio-economic orders or agro-food systems (Aggeri et Hatchuel, 2003). A specific example of the latter are participatory design and mediation activities in situation of change in R&D system of activities (Beguín & Cerf, 2009). The challenge also need to account for the pioneering movement of organic farming and ways of consuming (Lamine, 2009) that plays the role of a formative template.

System innovations are multi-factor, multi-actor and multi-level (multi-scaled) and can only be understood in terms of historical co-evolutionary processes which link up these actors, factors and levels. These historical processes are shot through with uncertainty and are open-ended learning processes. Influencing such processes has proved to be difficult, but not impossible. To stimulate sustainable development, the challenge is to influence developments at an early stage, when they are still reversible and one can hope to sway the balance between desirable and undesirable developments.

Researches on system innovation, knowledge regimes and design practices in the agro-food sector can be considered as pivotal examples of what Gibbons et al. (1994) called a mode 2 type of knowledge production. In fact, it transcends traditional disciplinary science in two ways, viz. (1) it combines insights from various disciplines and (2) knowledge is generated in a combined effort between scientists and stakeholders from the domain under investigation. But, after the debates about the Mode 1 – Mode 2 model (Pestre, 2003), researchers and practitioners are aware that more knowledge about those dynamics is needed and more expertise is required to get further. This is why a joint effort between European researchers, policy makers and strategic actors of the agro-food sector is of crucial importance to reflect, compare and design elements of the roadmap towards sustainable agriculture. But this effort would be misleading if one would not take the transformative diversity of practicing transitions (Stirling, 2011) as a resource for major or minor shifts in system innovations.

### **Rationale of the international workshop**

The key starting point for the meeting is that technical change and societal change are highly related, forming a seamless web (Hughes 1986). Any transition to sustainability will imply a high level of social-cultural change coupled with a similar high level of technological change and, correlatively, many global or local social debates about the ways of designing the future and the realization of system innovation. In a general sense, system innovations are defined as major changes in the way societal functions such as food production and consumption, energy use and supply, transportation, etc., are fulfilled. Such changes typically involve a co-evolution of a number of related elements, including technology, infrastructures, symbolic meanings, governance structures, scientific knowledge, industry and related institutions etc.

The need for system innovations that lead to more sustainable development paths has been recognised in various policy networks and research programmes. Over the past decade, this has rendered a host of insights in innovation processes as well as practical experiences on attempts to stimulate system innovation towards sustainability (Poppe et al. 2009; Spaargaren et al. 2012).

It appears, however, that there is a considerable mismatch between general insights developed in research and the more detailed practical issues that are at stake in concrete projects and programmes. As a result, it is far from clear how to set up projects and programmes (local initiatives) to contribute to system innovation towards sustainability. One reason, sourced by historical studies, is that system innovations can take a long time (of the order of decades) and rarely result from a single new development but from a long process of combination and re-combination of novelties from different sources. This calls for a comprehensive and reflexive understanding of shifts in knowledge regimes and design practices. This workshop seeks to lay the foundations for such an endeavour, in terms of analysis as well as in terms of governance (Barbier and Elzen, 2012).

### **References**

- Aggeri, F., et Hatchuel, A., (2003). "Ordres socio-économiques et polarisation de la recherche dans l'agriculture: pour une critique des rapports science/société", *Sociologie du Travail*, 45(4): 113-133.
- Allaire G., Wolf S., (2004). "Cognitive Representations and Institutional Hybridity in Agrofood Systems of Innovation". *Science, Technology and Human Values*, 29 (4): 431-458.
- Barbier M. and Elzen B. (eds), 2012. *System Innovations, Knowledge Regimes, and Design Practices towards Transitions for Sustainable Agriculture*. Inra [online].
- Béguin P., and Cerf M., 2009. *Dynamique des savoirs, dynamique des changements*, Editions Octares, Collection Travail et Activité humaine.
- Elzen, B., Geels, F.W. and Green, K. (Eds.), 2004. *System Innovation and the Transition to Sustainability*. Edward Elgar Publishing Ltd. Cheltenham.
- Elzen, B., Barbier M., Cerf M. and Grin J., 2012. Stimulating transitions towards sustainable farming systems. In I. Darnhofer, D. Gibbon and B. Dedieu (Eds.). *Farming Systems Research into the 21st century: The new dynamic*. Dordrecht: Springer.
- Elzen, B., Mierlo, B.C. van, Leeuwis, C. (2012). Anchoring of innovations: Assessing Dutch efforts to harvest energy from glasshouses, *Environmental Innovation and Societal Transitions*, 5, p. 1-18.
- Geels, F.W., 2005. *Technological Transitions and System Innovations: A co-evolutionary and socio-technical analysis*. Edward Elgar Publishing Ltd., Cheltenham.
- Gibbons, Michael; Camille Limoges, Helga Nowotny, Simon Schwartzman, Peter Scott, & Martin Trow (1994). *The new production of knowledge: the dynamics of science and research in contemporary societies*. London: Sage. 292.
- Hughes, T.P. (1986) 'The Seamless Web: Technology, Science, Etcetera, Etcetera', *Social Studies of Science*, Vol.16, pp.281-292.
- Lamine C., (2005). Settling the shared uncertainties : local partnerships between producers and consumers, *Sociologia Ruralis*, 45, 324-345
- Leach, M., Rokstrom, J., Raskin, P., Scoones, I.C., Stirling, A. C., Smith, A., Thompson, J., Millstone, E., Ely A., Arond, E., Folke, C. and Olsson P., (2012). Transforming innovation for sustainability. *Ecology and Society*, 17 (2). p. 11.
- Lemasson P., Weil B., Hatchuel A., 2006. *Les processus d'innovation- Conception innovante et croissance des entreprises*, Paris: Hermès
- Pestre D., (2003). "Regimes of knowledge production in society: towards amore political and social reading", *Minerva*, 41:245-261.
- Poppe, K.J., C. Termeer and M. Slingerland (Eds.) (2009). *Transitions: towards sustainable agriculture and food chains in peri-urban areas*. Wageningen: Wageningen Academic Publishers.
- Spaargaren, G., P. Oosterveer and A. Loeber (Eds.) (2012). *Food practices in transition. Changing food consumption, retail and production in the age of reflexive modernity*. London: Routledge.
- Stirling, A. (2011). Pluralising progress: From integrative transitions to transformative diversity. *Journal of Environmental Innovation & Societal Transitions*, 1 (1). pp. 82-88. ISSN 2210-4224
- van Mierlo, B., M. Arkesteijn, C. Leeuwis (2010). Enhancing the reflexivity of system innovation projects with system analyses. *American Journal of Evaluation*,

## Issues

The Scientific meeting will address *three main issues* and cover *several agricultural subsectors* for emerging system innovations in the agro-food systems. These are:

- The issue of *analysis*: Analysing the relation between concrete projects and programmes and dynamics in agro-food systems, including system innovations, knowledge regimes and design practices that are currently ongoing in transitions.
- The issue of *acting*: reporting and assessing collaborative action in system innovations, knowledge regimes and organizational design aiming at sustainable transition.
- The issue of *governance*: Understanding how government agencies and other actors organize themselves and what they do to encourage and influence to make the agro-food systems more sustainable and resilient.

The subsectors include (but are not limited to):

- animal production;
- arable farming;
- conservation and biodiversity;
- agroecological systems
- glasshouse horticulture;
- biomass production for fuel and fibre.

## Key themes

Contributions should address one or more of the following themes

*Understanding system innovations in the agro-food sector, a.o..*

- How can system innovations in the agro-food sector be characterised?
- What is the role of various actors in different phases?
- How are barriers associated with system innovations overcome and what is the role of learning in this process?
- How do local initiatives challenge existing structures?
- What is the role of changes in consumption preferences in system innovations?

*Knowledge regimes in transition, a.o.*

- What is the resilience of scientific knowledge production?
- How do the 'matters of concern' about sustainability redefine the relation between scientific production and innovation?
- What are the types of problems that researchers, engineers and extensionists have to face to address sustainability?
- What are the characteristic and effects of learning in boundary settings and projects?

*Influencing transitions in the agro-food systems, a.o.*

- What role do science and research play in influencing transitions?
- What kinds of interventions of governmental agencies most effectively seem to 'manage' system innovations?
- What is the role of the public versus the private sector, and how diverse are the positions of public and private actors?
- What is the specific role of intermediaries and how do innovation brokers operate?

*Design practices in transitionss, a.o.*

- What is the role of 'system builders' in different phases?
- How are participatory design and *settings* of collective experiments shaped and implemented?
- How do design practices stimulate learning towards system innovation?
- What are the frames and politics of reflective practitioners in situations of change?
- How do agency, discourses, frames and interferences contribute to perform R&D agenda for sustainability transition?



## Abstract Submission

### Deadlines

1

Submission of abstract:

**31 Jan. 2014**

Notification of acceptance:

**28 Febr. 2014**

Full paper due:

**9 May 2014**

### Requests for Abstracts

2

State name, affiliation, full address and e-mail

Maximum 800 words

Abstracts should address issues and themes mentioned below in the "Background" section. Include:

- (1) theoretical framework,
- (2) analytical perspective and matters of enquiry,
- (3) empirical domain,
- (4) main findings,
- (5) discussion.