

## **Introduction to section 4 – Agricultural knowledge and innovation systems in transition**

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While Agricultural Knowledge and Innovation Systems (AKIS) used to have clear contours and institutional set-ups – dominated often by publicly funded agricultural research, extension and education – they have increasingly evolved into much more pluralistic, fuzzy and temporal sets of multi-stakeholder networks. Several factors have been influential in bringing about this shift.

First, the dominant view on agricultural development became more and more contested from the early 1980s onwards. Societal pressure groups and scientists criticized modern agriculture for its detrimental effects on the natural environment and the world ecology at large. Thus, new societal parties, problem definitions and objectives entered the agricultural policy arena, while the old policy objective (increasing agricultural production) had become less relevant in view of substantial overproduction in key sectors. Against this background, the dominant policy view became that AKIS could not remain a purely agricultural affair, and that it needed to open up to new societal players (e.g. consumers, nature conservationists, the environmental movement, etc.) in order to be able to deal with the new concerns, options and priorities.

Second, on the wave of the generally increased trust in market forces, privatisation of research and extension became an interesting option for leveraging change in the knowledge infrastructure. An additional rationale for embarking on privatisation and decentralisation was that public extension and research organisations were seen as operating in an inefficient, bureaucratic, top-down, paternalistic and inflexible manner, and hence were not responsive to the needs and demands of clients (Umali and Schwarz, 1994; Rivera, 2000). This development went parallel with and was stimulated further by the debate on innovation in which the linear model was contested ever more and the role of users (the demand side) in innovation processes was stressed. Changing theories of innovation, therefore, can be seen as a third major influence that shaped the deliberate reorganisation of AKISs. Nowadays innovations are no longer looked at as consisting of technology only, but rather as successful combinations of ‘hardware’ (i.e. new technical devices and practices), ‘software’ (i.e. new knowledge and modes of thinking) and ‘orgware’ (i.e. new regulations, market arrangements and forms of organisation) (Smits, 2002). In this perspective the social and organisational conditions that may affect the ‘survival’ of innovations are no longer seen as external and static, but rather as integral parts of the innovation. Thus, innovation depends on effective collaboration in a network of interdependent societal actors. In order to stimulate the emergence of complementary action in a network, new roles for research and extension have been suggested, along with new methodologies and approaches (Gibbons *et al.*, 1994; Röling, 2002).

It is not easy to make well-founded statements about the functioning of the current knowledge infrastructure that is supposed to enhance innovation in agriculture and other forms of land-use. On the one hand this is related to the fact that the situation is far from stable and has not crystallized yet; new developments are taking place on a regular basis. We currently witness, for example, intensified efforts by the EU to shift from supply-side financing (with

the government and other users in the role of client) to demand-side funding by means of vouchers, whereby societal stakeholders acquire greater control over the spending of available public money. Another obstacle is that systematic comparative research on the functioning of new arrangements largely is absent. In view of this vacuum, papers in this section set out to describe, analyse and compare current developments in AKISs, with specific attention to forms and processes of institutional and methodological reform.

The contents of this section is organised along three lines:

### **Public interests and privatised innovation systems in comparative perspective**

An important question that needs to be addressed in the context of current transitions is how public interests and social issues are dealt with – or may be effectively safeguarded – in AKISs that are characterised by increased dominance of market mechanisms. More broadly, some papers present and compare the current set-up and dynamics of AKISs in different European countries, and analyse how their functioning has changed (e.g. papers by Labarthe, Leeuwis and Klerkx, Von der Heiden and Wielinga). Special attention will be paid to analysing current linkage mechanisms between research, extension, education and societal stakeholders, and the institutional arrangements that govern interactions in innovation networks. The indications are that coherence and co-ordination between the classical parties in AKISs have declined, which raises the question as to whether (and when) this must be regarded as a positive or a negative development. Discussions will be oriented in part to identifying lessons, strategies and arrangements that are relevant to tackling current problems and challenges within AKISs.

### **Changing roles of research, extension and education in stimulating innovation**

The new conception that innovation is about fostering new forms of coordinated action among multiple stakeholders, has important implications for the role of change agents and knowledge workers. It implies that conventional repertoires of 'research', 'education' and 'extension' needs to be supplemented with other modes of process support aimed at building networks, developing shared visions and understandings, facilitation of social learning, conflict management, and capacity building (see Leeuwis, 2004). A particular challenge that needs to be addressed is that, notwithstanding the importance of local initiatives and dynamics, it is clear that the potential for innovation at the grassroots level is often constrained by conditions and processes at higher aggregation levels. Thus, new role conceptions for change agents and knowledge workers must anticipate the need to forge new and effective linkages between rural communities and processes and dynamics elsewhere in production, consumption and governance 'chains'. Reflection on the new and old roles that are performed in present day AKISs, and their effectiveness in bringing about innovation is presented by e.g. Kenny and Nettle, Spoelstra *et al.* and Brinks and De Kool.

### **Methodological lessons**

New AKIS configurations and role perceptions have led to considerable experimentation with new approaches and methodologies. Drawing upon these, the papers in this section present recent experiences with e.g., vision building, trans-disciplinary research, demand articulation and steering, networking and community formation (e.g. by Francis *et al.*, Davies *et al.*, De Boef and Pinheiro, Proost *et al.* and Vilas Boas and Ferreira). Case specific lessons will be identified, and attempts will be made to arrive at cross-cutting insights (see e.g. Neely and Dixon).

## **References**

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