An intrinsic characteristic of farmers is that they innovate to sustain, expand and improve their production systems. Agricultural innovation then, is a product of social negotiation among stakeholders. The spreading of this innovation is only possible through effective social organisation and communication at community level (Hagmann et al., 1999, Padre et al., 2003, Defoer et al., 2002). Funding for agricultural innovation fluctuated over the past decades when the attention of policy makers and international donors, during the nineties, shifted to supporting Sector Wide Programmes, (SWAPs) and Poverty Reduction Strategy Papers (PRSP), which emphasised social sectors and programmes in response to the negative impact of Structural Adjustment Programmes (SAPs).

Recently, policy makers have begun to show renewed interest in agricultural innovation. In September, 2000, the member states of the United Nations unanimously adopted the Millennium Declaration stating eight Millennium Development Goals (MDGs) to be reached by 2015. All MDGs are related to sustainable reduction of poverty in its broadest sense. The reduction of rural poverty, in terms of food security and household income, is addressed in MDG 1. Most organizations operating in the field of international development co-operation, e.g., the New Partnership for Africa's Development (NEPAD), World Bank, European Union (EU), Department for International Development (DFID), Food and Agricultural Organization (FAO), the Technical Centre for Agricultural and Rural Cooperation (CTA) etc., consider agricultural development to be the engine for rural poverty reduction. Large gains have been made in Sub Saharan Africa (SSA) in improving household food security, but less progress has been made in raising rural incomes (Sutherland et al, 2003).

Agricultural innovation systems for rural development are rapidly changing in terms of being demand-driven. Pull functions are coming into balance with push functions, and social negotiation is becoming more equitable. Under pressure from international financing agencies - but also from their own increasingly growing urban electorate -, central governments have been retreating from financing agricultural innovation development, which is increasingly being seen as a private good rather than a public domain.

National Agricultural Research and extension organisations have been deconcentrating (1) at the local level in order to meet (local) demand and also to keep up with the general trend of decentralisation of public administration at the Local Government level. Changing and increasingly more competitive markets have also provided new opportunities that require innovation in order to develop and strengthen economic chains. National Governments (and organisations such as the World Bank) are focusing more and more on long-term innovation development strategies. Sustainable natural resource management research, strategic (economic chain development) research, as well as basic research, require new waves of institutional innovation (Probst et al, 2003, Chema et al, 2003, Tabor et al, 2000). A multi-stakeholder approach to service delivery in general and innovation development in particular has become essential. The emphasis on public-private partnerships foresees a strong role for both decentralised local governments which are accountable to communities and the local private sector (Steenhuijsen Piters et al., 2003).

Agricultural innovation has been instrumental in increasing household and national food security. The CG system (Consultative Group on International Agricultural Research) and National Agricultural Research Organization (NAROs) have all contributed to this, although
Technology development can only lead to agricultural innovation through strong multi-stakeholder participation. Farmers' groups and organisations have directly and indirectly (through systems approaches) contributed. In the context of sustainable achievement of food security, many different farmer participatory approaches have been developed, which gradually moved from the consultative mode of participation in agricultural innovation systems to a collaborative and collegial mode of farmer participation and hence farmer empowerment. Agricultural research and extension organisations at all levels have widely, but to a varying degree, become involved in farmer-demand identification through approaches such as Farming Systems Approach (FSA), Participatory Rural Appraisal (PRAs), Participatory Technology Development (PTD), etc. (Sutherland et al, 2001, Thomlow et al, 2001, Probst et al, Bentz, 2001, Freeman, 2001, Collinson et al, 2000). Rural poor and women have been included in these forms of participation (Freeman et al, 2001).

Gradually, farmers - and other stakeholders - (mainly public and private/NGO extension activities) participation has become institutionalised in formal linkage mechanisms e.g. in Memorandums of Understanding (MoUs) and contracts, boards and committees. They have also been operationalized through various forms of farmer groups (Farmer Research Groups (FRGs), Farmer Extension Groups (FEGs), FarmerFieldSchools (FFSs), Comités de Investigación Agropecuaria Local (or local agricultural research committees) (CIALs), etc.,) and approaches such as Participatory Learning and Action Research, PLAR (Defoer et al). Institutional innovations such as multi-stakeholder innovation development funds, Public Private Partnerships (PPPs), multi-stakeholder committees, etc., have developed, which was also made possible by the further deconcentration of national and international research organisations (Sumberg et al, 1997, Chema et al, 2003). Research and extension organisations have, on demand, also started to change in a comprehensive way in order to address these changes, e.g., Client-oriented Research Management Approach (CORMA) (Heemskerk et al, 2003) and Participatory Extension Approach (PEA) (Hagmann, et al, 1998). National Agricultural Research Organisations have become part of National Agricultural Research Systems with innovation networks made up of a multitude of stakeholders at various levels (national, local and community level). Analysis of the Agricultural Knowledge and Information System (AKIS) has become an important element in institutional development in agricultural innovation systems (RAAKS, Engel et al. 1997).

The enhanced involvement of farmers, farmers' organisations, and farmers' advocates of innovation development planning, management and monitoring and evaluation has contributed to a more demand-driven agricultural research and extension agenda of public and private service deliverers. At the same time, however, an unbalanced emphasis on food security issues resulted from the limited involvement by the private sector in innovation development planning which had little emphasis on economic chain development. Questions have also been raised about the effectiveness of farmer participation alone, i.e., without multi-stakeholder participation or demand of society (Gladwin et al, 2002). The introduction of new public management modes in the public sector (Heemskerk, et al, 2003) has led to opportunities for public-private partnerships, although involvement of the private sector for a co-innovation process in economic chain development is still in its infancy (Fujisaka, 1999; Pound et al, 1998). Public-private mixes are also important in addressing the needs of the different groups in society, varying from commercial farmers (private sector investment) to disadvantaged groups (public sector investment).
Private sector involvement in agricultural innovation has increased to the extent of privatization of innovation development programmes and organizations in major economic chains (e.g., coffee, tea and cotton) in some SSA countries and Latin-America (Milli and Rodriguez, 2002). Agricultural innovation is expected to contribute to the further development of economic chains and rural income in the future.

**Specific suggestions for the future**

It may be clear that trends have been set to increase on-demand research and extension and enhanced participation of farmers, their organisations and the private sector. Future challenges remain to:

- ensure increased *on demand* research and extension by empowered farmers (and/or their organisations) and the private sector (Sagustume et al, 2003).
- provide farmers’ organisations and the public sector with the capacity to institutionalize innovations so that they will be able to both organize and implement their jointly developed innovations (Hagmann et al, 1999).
- consider that for improvements in the dissemination of agricultural changes, institutional innovations may be needed, with respect to enhanced communication and transparency (Mundy and Sultan, 2001).
- develop the role of the private sector for co-innovation in economic chains (local, national and international) as that will prove to be essential in improving them.
- redefine the role of indigenous and farmer knowledge in relation to the need for an SSA innovation push: revalorisation as well as strengthening of farmers’ learning capacities,
- design new modes of learning for innovation and strengthening farmers’ learning capacities.

Ultimately, demand driven innovation systems can only be successful with substantial contributions (technical as well as financial) from the demand side (farmer organisations and private sector), national governments and international donors.

------

Author: Willem Heemskerk is senior advisor of Sustainable Economic Development at the Department of Development, Policy and Practice of the Royal Tropical Institute (KIT) in Amsterdam, The Netherlands

(1) *Deconcentration*: Redistribution of decision-making authorities and financial management responsibilities among different levels of central government ()

-------------------------

**References:**


Pound, B.; Martin, A.; Thomas, M.; Njokwe, B.J. Principles and practical implementation of farming systems research and farmer participatory research. Including Vulindlela district and Sobantu village case studies. Materials developed during courses given as part of the project "Support to the Institute of Natural Resources for Institutional ...1998, 183 p.


04/01/2005