Centre for Development Innovation

Policy Brief
Market Linked Innovation Systems
Opportunities for Strengthening Agricultural Development in Ethiopia

In late 2010 the Royal Netherlands Embassy in Ethiopia commissioned a study on Strengthening Market Linked Innovation Systems to help guide its contribution to the Agricultural Growth Programme (AGP). This policy brief summarises *the key findings.*

Background

Ethiopia is a making a very significant policy commitment to agricultural driven economic development and food security. This is already underpinned by a large investment in agricultural extension, research and education. In Ethiopia, over recent years, there has been an explosion of innovative examples illustrating effective agricultural development with good links to domestic and international markets. A core aim of government policy is to 'scale up best practices'.

The report looked at innovation processes in the agricultural sector in Ethiopia including lessons from recent successful examples. It also focused on linking production with markets and agribusiness development. The study offers a wider context of current international thinking and experience on agricultural innovation systems. The aim is to provide some insight into how Ethiopia's current system of agricultural extension, research and education could be further strengthened to meet the policy objectives. In particular, there a focus on how the system performance could be enhanced through capacity building of the various actors, and improvement of the institutional setting in which they operate. The study complements the recent report by IFPRI and the Gates Foundation (Davis et al, 2010) on the public agricultural extension system. In particular it places public extension in a wider context of innovation systems and market development. The two studies do however reach similar conclusions about the challenges facing agricultural extension and the recommendations from both studies are broadly coherent.

Good Examples of Market Linked Innovation In Ethiopian

The study looked at 21 good examples of innovation in Ethiopia. While just a 'snap shot' of the rapid developments in the Ethiopian agriculture sector they illustrate some key points:

1) There are many positive examples to learn from
2) With the right market incentives and policy support agricultural development can scale up very quickly
3) Collaboration between public and private sectors actors is critical
4) Brokering linkages between different players and different types of expertise is a key factor for success

What is an Innovation System?

"a network of organizations, enterprises, and individuals focused on bringing new products, new processes, and new forms of organization into economic use, together with the institutions and policies that affect their behaviour and performance. The innovation systems concept embraces not only the science suppliers but the totality and interaction of actors involved in innovation. It extends beyond the creation of knowledge to encompass the factors affecting demand for and use of knowledge in novel and useful ways."

World Bank 2006

Agricultural Innovation Systems and International Examples

Over the last decade there has been a shift towards conceiving agricultural research and extension in terms of 'innovation systems'. Innovation means putting a new idea or a new technology into use. An invention, new piece of scientific knowledge, a creation or a new product becomes an innovation when it improves how things are done, is economically viable to adopt and has a significant impact in its area of application.

An innovation system is a network of organizations, enterprises, and individuals focused on bringing new products, new

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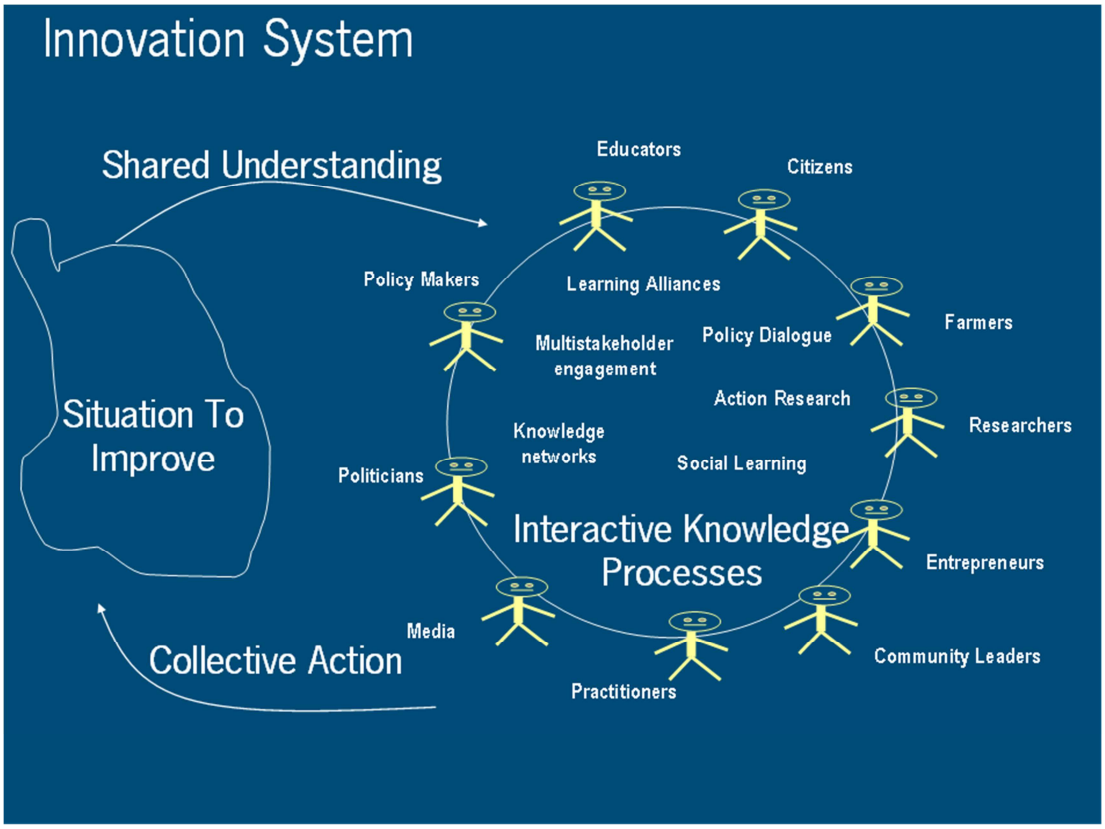


processes, and new forms of organization into economic use. An innovation system involves a much broader set of actors that just public research and extension institutions. In innovation systems thinking there is a particular focus on how the relationships between different actors enable innovation and learning.

A key insight from both the Ethiopian experience and current thinking on innovation systems is the importance of innovation brokering. This is the role of bringing different actors together from across the public, private and NGO sectors to jointly solve problems and to create an environment of trust in which innovation can flourish. Innovation brokers need a particular status and set of knowledge and skills to effectively carry out this role. Furthermore, they generally need to be seen as working for the overall good of a particular sector or value chain.

Emerging Issues and Opportunities

From the interviews, case studies and literature reviews the following emerging issues and opportunities were identified that have implications for the implementation of the Economic Transformation Programme and the Agricultural Growth Programme.

Positive Examples of Innovation: There are many positive examples of agricultural innovation, both technological and institutional to be found in Ethiopia. This report documented 21 such innovations These were captured by asking those interviewed what they considered to be the best examples of innovation in the sector. In most of the examples the strong driving role of market incentives and the importance of individuals and organisations that play a 'brokering' or coordinating role was notable.

Evolution of Marketing and Supply Chain Services: Government policies and emerging economic circumstances are creating the conditions for a much more market oriented approach to agricultural development. This complements a historical focus on food security where more attention was given to direct production aspects. Currently there is much emphasis on development of entrepreneurial activity by both farmers and local enterprises, the latter who can add value and provide input supply and market services.

Scaling Innovation and 'Best Fit' Options

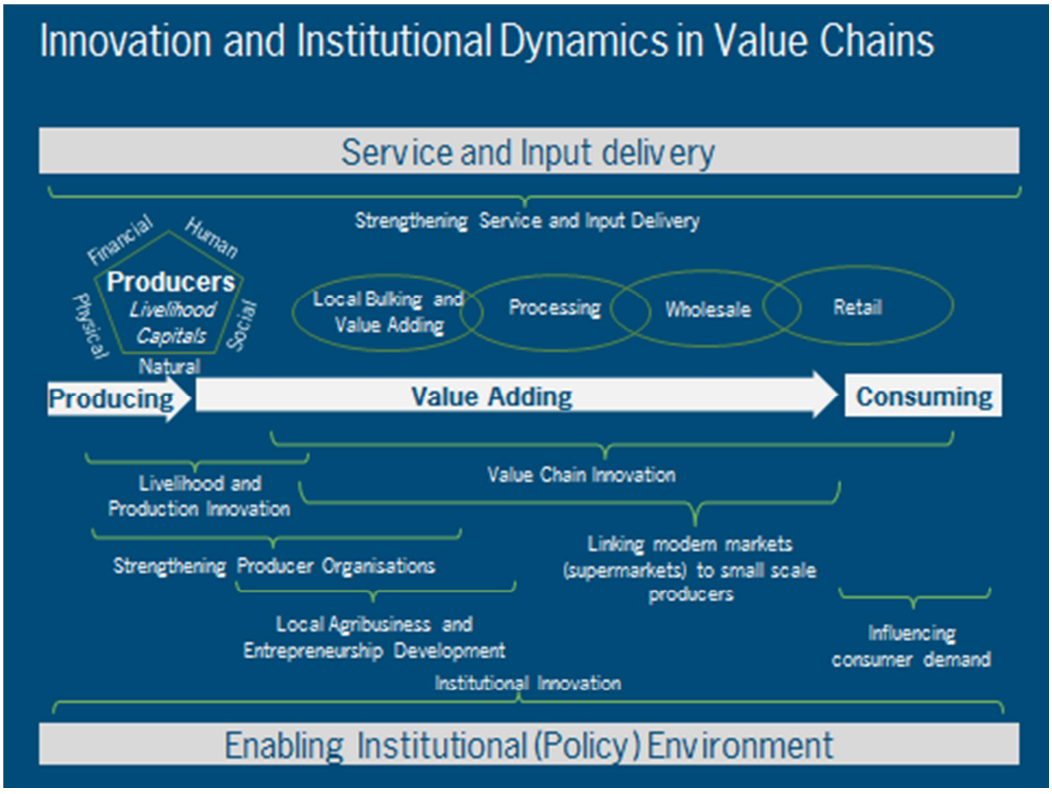
Agricultural growth in Ethiopia requires a significant scaling up of successes, innovations, and best practices. The reasons for success are often not just technological but also include a whole set of market and social incentives. Scaling innovation requires linking technological options with local innovation processes that create 'best fit' solutions tailored to specific circumstances. Understanding the full set incentive mechanisms influencing farmers behaviour is key to successful up-scaling.

However, to fully realise the policy objectives more capacity and understanding of market and value chain development is needed across the agricultural research, education and extension system. Further, there is a need to strengthen the role of private sector players and a support a more plural service sector to enable a wider scale uptake of market driven approaches.

Differentiation in the Sector: The agricultural sector in Ethiopia is very diverse due to differences in agro-ecology, social, infrastructure and marketing factors. The public agricultural, research and extension services at federal and regional level focus on support for male and female smallholders across the country. Differentiation in intensity and diversity of service delivery is based on the agro-ecological zone concept and their potential, as well as some main commodities, rather than on different categories of farmers. In terms of the capacity of small-scale farmers to engage in market linked entrepreneurial activity there is a need to better understand which farmers have the capacity and assets to do so and which do not.

Understanding of Market Driven Approaches, Innovation Systems and Processes: Many of the people interviewed said that they felt an attitude change was needed in how agricultural development is understood. There remains a strong perception that agricultural innovation predominantly involves developing and having farmers adopting new technologies that will increase yield. The concept of agriculture innovation systems, as explained in the Report is not well understood across the agricultural education, extension and research institutions. This is understandable as the agricultural education curriculum has historically focused largely on technical capacities for production and not on the capacities needed to develop new markets and coordinate agricultural value chains. It should be noted that a new Dutch funded Niche Programme is addressed this specific gap.

Drivers of Innovation: The growing Ethiopian economy, combined with emerging export demand presents many opportunities for market-oriented agricultural development.



As illustrated by most of the case studies market linked/value chain oriented agricultural initiatives are flourishing. In these cases the driver of innovation and agribusiness development is the market opportunity. Although technological production capacity is a critical component, evidence suggests that to achieve a rapid up-scaling of current successes reforms are required in the institutional setting, to ensure a more market driven approach to agricultural innovation and development. Up to now, the existing agricultural research and extension system remains predominantly focused on technology development and enhancing productivity at farm level.

Technology Push or Market Pull

There is growing recognition that rapid agricultural development requires a strong market pull, supported by improved production technologies. Creating the right balance between market pull and technology push is a new challenge for research and extension.

Linkages between Key Players: The interviews made with the different players involved in innovation illustrate the fragmentation in the knowledge systems at all, but particularly at a local level (woreda and kebele). Mechanisms for coordination have been formed at regional and zonal levels and are planned at woreda level. Lessons from these platforms illustrate the importance for coordination but there remains a limited capacity in facilitation of innovation processes. The current platforms have been largely government instituted with a major dominance of the public sector, more open, transparent and flexible mechanisms are needed, based on interest rather than duty to ensure a stronger coordinating role with market players. The current separation between different ministries of the agricultural production functions and the marketing functions as carried out by the unions and cooperatives was noted as a potential risk in further delinking production and market innovation. The emphasis in the AGP on coordination through ARDPLACS at all level offers much opportunity for strengthening linkages. The way in which this coordination role is executed is likely to have a significant impact on innovation processes in the sector.

Innovation Brokering and Facilitation: Brokering of innovation networks and facilitation of innovation processes is a capacity which does not widely exist in the current extension setup. Some experiences are emerging through private sector, NGOs and donor supported initiatives. In general brokering and facilitation skills are weak particularly at local levels. Nevertheless, it is increasingly realized by research and extension that such skills are needed if all relevant actors (e.g. market actors, and private service providers) are to be engaged in the innovation process. The lack of 'soft' skills was also a key issue raised by the IFPRI/Gates report. Recognition of the value 'free actor facilitators' (people or organisations who are perceived by others as having a relatively neutral position) is growing but still relatively limited. Research and university organizations as well as the corporate horticultural sector see potential for playing a greater role in this regard.

Role and Capacities of Research Institutions: Investment in building the capacity of research organizations (EIAR, RARIs and Universities) has strongly focused on development of technical science capacity and infrastructural development, and less on social science knowledge and skills. Research organizations have proven to be strong in developing suitable technologies for agricultural production, but are less capacitated for value chain development, market analysis and supporting innovation systems approaches. Nevertheless researchers are often successfully taking the lead in agricultural innovation processes, although the agricultural research four development (AR4D) principles are not fully mainstreamed. Given the interest and motivation of researchers, there is significant potential for research institutions to play a more active and diverse role within an innovation systems approach. This would however require upgrading of some capacities and the creation on a motivating funding and incentive structure.

Role, Curriculum and Capacities of Education Institutions: Ethiopia has a strong foundation for agricultural education at both the university and college levels and is producing a large number of graduates. However, the capacities of these institutions are severely stretched in terms of physical, financial and human resources. The curriculum has remained largely of a technical nature meaning that students do not adequately development the marketing, innovation and 'soft' competencies that are increasingly recognised as an important complement to technical capacities. The consequence is that graduates do not necessarily develop the full set of competencies and practical experiences required for them to be fully competent in the positions they take on after graduation. There is a limited interaction between the education institutions and the research and extension system which further constrains the creation of opportunities for students to gain practical experience. There is wide recognition of these issues and a strong interest from both the government and the institutions themselves to strengthen the effectiveness of agricultural education and training.

Role, Functioning and Capacities of Agricultural Extension: Agricultural extension is foreseen to become more decentralized, agribusiness and market-oriented and farmer demand led in a change process as part of the AGP. This implies a key role for extension in multi-stakeholder processes for agricultural innovation. As yet public extension has not been heavily engaged in this role and has limited process management and facilitation capacity. Although curriculum change at ATVERTs is planned, this has not yet been fully developed and implemented. In implementing the AGP fostering a public extension system that is able to flexibly respond to the dynamics of local level situations is critical. As clearly articulated by the IFPRI/Gates study (Davis et al, 2010) significant challenges exist within the current extension system in relation to field level resources, incentives structures and 'soft' skills of extension agents. However, the enormous scope of the extension system offers much opportunity along with good examples of where it has been very successful.

Incentive Mechanisms: The development of agricultural research, education and extension in Ethiopia has historically focused to a large extent on the development of human capacities with less attention given to the incentive mechanisms necessary for this capacity to be effectively deployed. Most dramatically this is seen in in relation to the functioning of the farmer training centres. The capacity of a very large number of DAs has been created through the work of the ATVETS. However at the field level the incentives for the DA to stay in their position and to perform as expected is often weak. Further, the incentives mechanisms for farmers to actively use the training centres are also not necessarily effective. To create an effective market linked innovation system it is necessary to understand and manage the incentive mechanisms that drive the behaviour of the key actors in the system.

Recommendations for Netherlands Support of the AGP

Based on the findings of this study nine recommendations were made in terms of how the Netherlands Embassy could most effectively support the AGP

Recommendation One: Promote and support an innovation systems approach to the overall implementation of the AGP.

Recommendation Two: Strengthen the facilitation and innovation brokering capacities of key public, private and NGO actors.

Recommendation Three: Support an AGP wide initiative that would identify and scale-up effective innovation processes, particularly related to best-fit strategies and complementing technical innovations with market and institutional innovation.

Recommendation Four: Combine direct Dutch support for the AGP with complementary activities that enhance innovation capacity and respond to market opportunities.

Recommendation Five: Contribute to the establishment of an effective monitoring and evaluation (M&E) system for the AGP.

Recommendation Six: Encourage the use of an integrated value chain approach in the implementation of the AGP and contribute to developing the required capacities of key players for this to occur.

Recommendation Seven: Support pilot innovation outreach programmes that strengthen linkages between research, education and extension and are linked with the work of ARDPLACS.

Recommendation Eight: Continue and enhance the support for capacity development of Universities and ATVETS with a particular focus on complementing technical competencies with those for marketing, agribusiness, facilitation and innovation brokering.

Recommendation Nine: Strengthen mechanisms for Netherlands-Ethiopia business and technical co-operation particularly related the dairy, horticulture, water and seed sectors.

Key Messages

- The innovation systems approach provides a good framework for strengthening agricultural knowledge processes
- Social and physical technologies need to be combined for effective scaling of innovation
- Effective linkages between policy, private sector, research, education and extension are critical for agricultural growth
- The brokering and facilitation of innovation processes needs strengthening in the current research and extension system
- It is critical to complement technical skills with skills related to market development, entrepreneurship, communication, participatory processes and facilitation

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