

**Partnerships for enhancing Market-led Innovation processes –
Experiences and Lessons from IPMS Ethiopia**

Ranjitha Puskur¹, Ponniah Anandajayasekeram², Kahsay Berhe¹ and Dirk Hoekstra¹

¹ Improving Productivity and Market Success (IPMS) Project, ILRI, Addis Ababa

² IFPRI/ISNAR – ILRI, Addis Ababa

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¹ IPMS, ILRI, PO Box 5689, Addis Ababa, Ethiopia. Corresponding author, email:
r.puskur@cgiar.org

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Abstract

The IPMS project proposes to ‘contribute to improved agricultural productivity and production through market-oriented agricultural development, as a means for achieving improved and sustainable livelihoods for the rural population’ in Ethiopia. To accomplish this goal the project supports development and (action) research on innovative technologies, processes and institutional arrangements in three focus areas i.e. i) knowledge management ii) innovation capacity building of public and private sector partners, farmers and pasoralists; iii) market oriented production technologies and input/output marketing and financing; contributing to evidence-based policy making to support innovation processes and capacity development.

Adopting the Innovation systems perspective, the project acknowledges multiple sources of innovation and the critical role of institutions. The activities deploy the use of partnerships and linkages along the value chain to promote complementary investments in necessary areas and sectors to generate innovations and impact. Innovative approaches to production, NRM, technology adaptation and delivery, service delivery, marketing and, institutional change, linked to market demands and the capacity of the communities and its individual members to handle such innovations in a sustainable manner are being introduced and adapted in pilot sites. Learning from these experiences is an integral aspect to draw lessons for scaling up. This paper summarises the experience of IPMS in developing and nurturing innovative partnerships and lessons learnt, to date.

Key words:

Ethiopia, Innovation system, partnerships, knowledge, linkages, market-orientation, process, technology, service delivery, institutions

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1. Introduction

In Ethiopia, 84% of the estimated 70 million people live in rural areas and depend on agriculture for their livelihoods. The sector contributes 41.4% of the Gross Domestic Product of the country. The average cereal yields are low at 1244 kg/ha (World Bank 2006b). Livestock productivity is lower than most other countries in sub-Saharan Africa. The use of improved agricultural technologies is limited and mechanisation is negligible. As a result, average per capita income is estimated at USD 110 per annum, with about 45% of the rural population living on income below the poverty line of one USD per day (World Bank 2006b). Many rural families suffer from chronic food insecurity and are extremely vulnerable during periodic drought. Inefficient and inappropriate use of soil, water and vegetation contribute to degradation of Ethiopia's natural resources (IPMS 2004).

Ethiopia, which was a net exporter of grains and legumes about half a century ago, is now confronted with the challenge of keeping food production at pace with its population growth, preventing declining per capita food production, and reducing its dependence on food aid. Despite demonstrated potential to boost agricultural production, sustaining productivity increase has not been achieved (Gebremedhin *et al.* 2006). The agricultural imports still exceed exports resulting in a trade deficit of 43 million \$ in 2004. The agricultural growth rates actually fell from 2% during 1990-99 to 0.9% during 2000-04. The crop production index in 2004 was 110 and that of livestock, 116 with food production per capita increasing to only 102, all from a base of 100 in 1999-01. Only 2.5% of the cultivated land is irrigated (World Bank 2006 b).

Ethiopia adopted an Agricultural Development-led Industrialization (ADLI) strategy, which initially focused on food crops and NRM. More recently, the country has added market orientation to this strategy (Gebremedhin *et al.* 2006). Increased availability and utilisation of appropriate technologies, an effective and efficient service delivery system and, sustained demand for the agricultural outputs are critical in such market-oriented agricultural development efforts. However, the infrastructural development is also rather limited which is a major bottleneck. Only 17% of the rural population lives within 2 km of an all season road and only 0.4% has access to electricity (World Bank 2006 b). However, Ethiopia is embarking on a huge rural electrification scheme currently (<http://www.eepco.gov.et/>).

A number of key ingredients are necessary for achieving market orientation and also making this process inclusive. Innovation, defined here as putting available knowledge from multiple sources to economic use, is critical for this to happen. Partnerships are vital for innovation processes. This paper looks at the case of an on-going project in Ethiopia which has been designed to develop options in support of the government strategy on agriculture for accelerating the transformation. The project has been in operation only since 2005 and the lessons are just emerging. The role of partnerships for market-led

innovation in selected sectors for development of priority marketable commodities and the lessons learnt so far will be the focus of this paper.

2. The policy context and strategies for attaining market orientation

The overall development strategy of Ethiopia is based on the expansion of a strong free market economic system with markets expected to lead production. Technology development and Extension, markets and the demand side development, Institutional competence and performance and, integrated and co-ordinated service delivery are some strategies which are crucial to making market orientation of agricultural sector a reality (Puskur and Hagmann 2006).

The government strategy envisions that the technological interventions will be agro-ecology based and the major source will be adaptive research of existing technologies developed by the national and/or international research systems. As a long-term target, the strategy envisions the creation of educated farmer population, through primary education and the use of Farmer Training Centers (FTCs).

In support of the market oriented strategy, the MoARD has embarked on developing a strategic plan for export market oriented crops (wheat, barley, tef, lentil, chickpea, faba and haricot beans, cotton, sesame, coffee and spices) and livestock (dairy, meat, poultry, apiculture, sericulture, fisheries, skins and hides) commodities. Reflecting the importance attached to agricultural marketing, the Government has embarked upon major institutional restructuring in order to strengthen agricultural production and marketing under the Ministry of Agriculture and Rural Development (MoARD). Initiatives include the appointment of the State Minister for Agricultural Marketing and reorganization of marketing responsibilities within the regional bureaus. The Government of Ethiopia (GoE) also established the Ethiopian Export Promotion Agency (EEPA), which is now a Department in the Ministry of Trade and Industry. In addition to the various Federal organizations that are mandated with agricultural marketing support services; some regional states have established regional level agricultural marketing support agencies. Several options are being promoted by the government to increase the farmer's income from marketing and processing, including the formation of cooperatives and better access to market information. The role of the MoARD in facilitating the provision of information at the farm level is still to be developed.

Even though the Government has market orientation as a goal for its agricultural sector, no specific strategies have been put in place or elucidated which will help the country and the sector attain that goal. Most past development efforts have been geared to increasing food production within an institutional framework which had a high degree of control by government institutions with no approach to actively include private sector and other players. The macro level policy, not supported by activities at the ground level, has not made much headway and it has remained a rhetoric.

The country has witnessed several efforts in this direction from various quarters, despite this shortcoming. Ethiopian research in the past decade has become responsive to market

demands and has started developing/testing varieties which are suitable for the export market. The role of farmers in the generation of new technologies was duly recognized by researchers and the former have become major partners in technology development processes. However, mainstreaming of these ideas through the extension system left much room for improvement, especially since the package approaches introduced by the MoARD did not offer much scope for learning.

In the last two years, a range of changes in the institutional and external environment have begun to take place. For example, rural extension services are on the threshold of a major shift in extension service delivery through the Farmer Training Centre (FTC) system. To equip the FTCs (one planned in each peasant association) with adequate skilled human resources, the government started the Agricultural Technical and Vocational Education and Training Institutes (TVETs) and the graduates are now populating the FTCs as development agents in each peasant association. This presents a huge opportunity but also poses a major challenge as these institutions also need to transform to be able to successfully implement an alternative, market-based approach to agricultural development. Rethinking the role of the extension services to support the goal of achieving market orientation is vital.

A necessary and integral part of the technology introduction services is the provision of improved inputs/services such as seeds, seedlings, agro chemicals, drugs, veterinary services, heifers, artificial insemination, credit, production and processing tools. Most of these inputs were supplied through the agricultural offices linked to the packages. While this has contributed to the development of agriculture, several sources indicate that improved inputs/services are usually in short supply and delivery is often untimely. Government policy is now stimulating diversification of input/service provision, involving private sector (Gebremehin *et al* 2006, Azage *et al* 2006). This shall also require enhancing the capacity of the small input producers/suppliers.

Though there have been several efforts on various fronts, they are not co-ordinated and have not led to perceptible impact. The challenge, therefore, is to develop a knowledge-based system which is capacitated and responsive to markets with linkages between different partners in development and improved development processes, including technology introduction, and input/output marketing to facilitate the development of marketable commodities.

Recognising this and to support the government initiatives, the MoARD embarked on the 'Improving Productivity and Market Success (IPMS)' project for Ethiopian farmers, which is donor-supported and implemented by the International Livestock Research Institute (ILRI) on behalf of the MoARD. This Research for Development project is presently being implemented in eight woredas (equivalent of districts) in four regions in the country, which vary widely in their demographics and cultural contexts.

3. Piloting options for learning – The IPMS project

The IPMS project proposes to 'contribute to improved agricultural productivity and production within functional market-oriented agricultural production systems, as a means

for achieving improved and sustainable livelihoods for the rural population'. This is aimed to be achieved through a multi-pronged strategy with activities that, a) strengthen innovative knowledge management systems, b) strengthen capacity of men and women farmers, pastoralists, CBOs, public and private agricultural institutions c) improve productivity and production through introduction of innovative technologies and service delivery systems d) develop strategies, policy, technology and, institutional options from research and lessons learned.

The objectives of the project reflect its focus - generating knowledge on how to use knowledge from multiple sources better for translation into economic benefits for farmers, with capacity strengthening of both institutions and individuals as the major plank. The project intends to draw lessons (both context- and location- specific and also generic) for institutional, technology and policy options in various contexts from this experience.

The project adopts the Innovation systems approach as its organizing principle. It essentially acknowledges that there are multiple sources of innovation which include the traditional sources (indigenous technical knowledge); modern actors (NARIs, IARCs, other RIs), private sector including agro-industrial firms and entrepreneurs (local, national and multinationals); civil society organizations (NGOS, farmers and consumer organizations, pressure groups); and those institutions (laws, regulations, beliefs, customs and norms) that affect the process by which the innovations are developed and delivered. The project focus is on analyzing how knowledge is exchanged and how institutional and technological change occurs in a given society by examining the roles and interactions of diverse agents involved in the research, development and delivery of innovations at all levels. Recognising the critical role of capacity strengthening, the project is striving to understand the appropriate strategies for capacity strengthening of different actors to increase the responsiveness and innovativeness of the system. The IPMS project deploys use of partnerships and networks in an Innovation Systems framework, along with promotion to encourage complementary investments in necessary areas and sectors to generate impact. New and/or innovative approaches to production, NRM, technology transfer, input supply, credit and output marketing are being introduced and adapted. Such innovations are linked to market demands and the capacity of the communities and its individual members to handle such innovations in a sustainable manner.

4. Interventions for market-led agricultural development

The following steps were followed in identifying interventions to be taken up by IPMS to develop market-orientation.

- a. Initial consultations were held with partners from the Ministry of Agriculture at Federal and Regional levels and Institutes of the Ethiopian Agricultural Research System to identify potential woredas for the project operation and marketable commodities in each of these.
- b. An assessment of the biophysical situation of the woredas was taken up and two farming systems per woreda were delineated. A preliminary study of institutions engaged in marketing, input supply, rural finance, Extension and, Gender and HIV/AIDS service was undertaken. The state of NRM and environmental issues were also addressed in this study.

- c. Priority commodities to be targeted for market-oriented development in the two farming systems (Table 1) were then identified in most PLWs through consultation with the Federal, Regional and Woreda stakeholders in each of the Pilot Learning Woredas (PLWs).
- d. A Participatory Rural Appraisal was employed to understand the production, input supply and marketing constraints with regard to each of the selected priority commodities. Potential interventions were identified to address these constraints along with a preliminary identification of partners who could help address the problems.
- e. These options were then discussed in a workshop with stakeholders which included farmers. They were then modified/refined/enhanced based on feedback received and accepted as directions for the project to implement.

This exercise resulted in a specific set of interventions spanning key areas like technology development / introduction, input supply, marketing and, capacity building for each of the priority commodities in each of the woredas following a commodity value chain approach, based on the constraints to be released and the local context and potential partnerships. The range of commodities in the eight woredas for the different farming systems and the broad areas of intervention for these sets of commodities are presented in Table 1.

Table 1 Priority commodities and areas of intervention in IPMS PLWs

PLW	Farming Systems	Priority commodities	Broad areas of intervention
Ada	1. Teff & Livestock	Teff, Wheat, Chickpeas, Lentils, vegetables, beef, Shoat meat, poultry, honey	Capacity building, marketing support (chickpeas), farmer-based input supply, introduction of new dairy technologies
	2. Teff & Dairy	Teff, Wheat, Chickpeas, Lentils, vegetables, fruits, milk, butter, beef, poultry	Capacity building, marketing support, farmer-based input supply system, introduction of new technologies
Mieso	1. Crop & Livestock	Sorghum, Sesame, groundnuts, haricot bean, chickpeas, Vernonia, hot pepper, vegetables, fruits, Dairy, beef, shoat meat, poultry	Capacity building, farmer-based input supply system, introduction of new crops and varieties,
	2. Pastoral	Shoats (goats)	Capacity building
Alaba	1. Teff, Haricot Bean & Livestock	Teff, Haricot bean, Vernonia, Vegetables, butter, shoat (Sheep) meat, poultry, honey	Capacity building, farmer-based input supply system, introduction of new crops, NRM, market facilitation
	2. Pepper & Livestock	Hot pepper, wheat, Vernonia, Poultry, Goats, Butter, Honey	Capacity building, farmer-based input supply system, introduction of new crops, NRM, market facilitation
Dale	1. Coffee & Livestock	Coffee, fruits, spices, milk, butter, poultry, small ruminant fattening	Introduction of native coffee variety, marketing studies (fruit, dairy), Introduction of new crops (pineapple), farmer-based input supply system, NRM, alternative draught power, sustainable vet service delivery system
	2. Beans & Livestock	Haricot bean, vegetables (onion), butter, milk, hide & skin, shoat meat, poultry	Marketing studies, introduction of new crops and varieties (haricot bean), alternative draught power, Animal health,
Fogera	1. Rice & Livestock	Rice, chick peas, noug, vernonia, hot pepper, vegetables, milk, butter, beef, hide and skin, poultry, fish	Capacity building, introduction of new varieties & irrigation systems, input supply (dairy, onion), market facilitation (onion), animal health, Production and marketing studies (fish)

	2. Cereal & Livestock	Hot pepper, vegetables, noug, dairy, beef, poultry, honey	Capacity building, input supply (Rice seed),
Metema	1. Cotton, Rice & Livestock	Rice, sorghum, Sesame, vernonia, hot pepper, vegetables, fruits, cotton, milk, butter, beef, shoat meat, poultry	Introduction of new crops and varieties, alternative draught power and tillage systems, farmer-based input supply system, capacity building
	2. Sesame, Cotton, Sorghum & Livestock	Sesame, Cotton, hot pepper, fruits, butter, beef, shoat meat	Introduction of new crops, varieties, Alternative draught power and tillage systems, farmer-based input supply system, capacity building
Alamata	1. Cereal & Livestock	Hot pepper, sorghum, teff, sesame, vernonia, vegetables, fruits, milk, butter, beef, shoat meat, poultry, hide and skin	Capacity building, introduction of new crops (vernonia, sesame), feed resources management (urea treatment), natural resources (reclamation),
Atsbi	1. Pulse and Livestock	Faba bean, field peas, lentils, vegetables, highland fruits, milk, butter, hides/skins, shoat meat, poultry, apiculture (queen rearing)	Capacity building, introduction of new crops (forages, onion), NRM, Organisation of coops
	2. Apiculture and livestock	Vegetables, fruits, butter, hides/skins, shoat meat, poultry, honey	Capacity building, introduction of new crops (forages, onion), NRM, Organisation of coops

5. Analysis of Partnerships

To enable the interventions, various partnerships were forged in the PLWs for different commodities, based on the felt needs. To analyse the partnerships and innovation processes until now, this paper will focus on some specific cases which mainly address major areas of intervention as presented in Table 2.

Table 2 Selected cases of commodities and areas of intervention for analysis

<i>S.No.</i>	<i>Pilot Woreda</i>	<i>Commodity</i>	<i>Area for intervention</i>	<i>Partners</i>
1	Metema	Banana	Product/variety introduction	OoARD ² , Woreda cabinet ³ , banana growers, banana sucker suppliers, chemical suppliers, IPMS
2	Fogera	Onion seed	Farmer-based seed supply system development and policy	OoARD, ARARI, BoARD inputs department, farmers, outgrowers, IPMS
3	Ada	Dairy	Marketing	Ada Dairy co-op, Dairy producers group, OoARD, ILRI, EIAR, Genesis Farms, microfinance, IPMS
4	Alamata	Fattening	Production and marketing	OoARD, Woreda administration, Women's Associations, Youth Associations, Abergele PLC, Microfinance, TARI, IPMS

² The line departments of the Ministry of Agriculture and Rural Development (MoARD) at the Federal level include the Bureaus of Ag and Rural Development (BoARD) at the Regional level and the Offices of Ag and Rural Development (OoARD) at the woreda level.

³ The Woreda cabinets are administrative and political bodies which are responsible for the woreda level administration. These include representatives from various line departments charged with development at the woreda level.

These cases have been selected based on some criteria including:

- Reasonable duration/time elapsed after introducing interventions
- Representing different areas of intervention
- Representing crops and livestock
- Involving a broader stakeholder spectrum

A brief description of the intervention and the nature of innovation are in order at this stage.

Metema Banana: A specific variety of banana (Cavendish dwarf) is in demand in the local markets within the and outside of the district and the supply comes from areas in the South of Ethiopia. The agro-ecology was found to be suitable for production of this variety. However, technical know-how and genetic material were not locally available. This required facilitation to access inputs in the form of suckers, training in production and management and, linkage creation for marketing.

Fogera onion: Onion is a crop with expanding markets and fetches high prices in Fogera and nearby areas. Fogera plains with their irrigation potential offer a huge advantage for vegetable production. Farmers responded to the market signals and have been intending to expand their onion production after harvesting rice. However, obtaining good quality planting material (seed and bulbs) in time and in required quantities has been difficult due to limitations in the OoARD's input supply system. The farmers who were members of co-operatives had a marginal advantage with the union supplying some amount of seed. A rapid market assessment also revealed the huge market for onion seed locally and in the Region. A strategy was then formulated to develop a farmer-based onion seed supply system, with various actors coming together. This included training in onion seed production, marketing and seed business; accessing better varieties of onions and; creating market linkages.

Ada Dairy: The dairy co-operative in Ada is the largest in the country. However, all its members are from the town in which it is located or from the peri-urban areas. Presently the cooperative has a plan to expand its operation which will require a substantial increase in the amount of milk supplied to the co-operative. There is a considerable amount of milk production with some crossbreds in rural areas around the town. The local markets could not absorb the milk produced by these dairy farmers, most of whom were women. They churned the milk to make butter and then sold it in nearby towns at any price that was offered. Their returns did not justify their labour and management investments. The women farmers said they regulated the amount of fodder they provided to their cows to control milk production to reduce the time they spent in churning the milk. Recognising this opportunity, interventions were initiated to organise these farmers and link them to the co-operative to make them members leading to establishment of local milk collection centers, training in modern dairy production and management to improve quality and quantity of production and, establishment of privately managed bull station to contribute to breed improvement and increased milk production in the area.

Alamata fattening: Abergele International Private Limited Company (AIPLC) established a holding area in Alamata, with some production facilities to contribute to its meat exporting activities. The PLC intends to capitalise on the high livestock population in Alamata and neighbouring woredas and seeks to develop contract farming. Realising this opportunity, a platform was created to facilitate this. This is the youngest intervention among the cases being studied, but appears very promising. The OoARD sees a huge opportunity for its farmers, in this food insecure woreda through livestock development. Strategies are being developed and implemented including mobilising farmers and facilitating groups for contract farming, training in modern fattening practices, feed resources development and management.

The form of innovation in these cases and the triggers are summarised in Table 3.

Table 3 Type of innovation and Innovation triggers

	<i>Metema Banana</i>	<i>Fogera Onion</i>	<i>Ada Dairy</i>	<i>Alamata Fattening</i>
Form of innovation	Opportunity driven	Opportunity driven	Opportunity driven	Opportunity driven
Phase of innovation	Emergence	Emergence	Emergence	Nascent
Market triggers	Local demand for better varieties	High prices for onion, expanding production and high demand for seed	Expansion plans of dairy cooperative, high local demand from co-operative, increasing number of private processing plants	Establishment of a export-oriented private company
Policy triggers	None	None	None	Government policy to support increased meat exports
Knowledge triggers	Knowledge of the variety in other regions and suitability of agro-ecology	Awareness of private seed production practices and systems in other areas	Presence of strong dairy research and experience	Awareness of fattening practices
Resource triggers	None	None	Availability of excess milk and expanding reach of Dairy co-operative	Technical support from PLC
Context: factors interacting with triggers	Acquaintance with growers in other regions	Market availability	Presence of biggest dairy co-operative in the country, research	Personal linkages with the staff of private company

			centres with strong focus on dairy	
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The actor linkage matrices (Annexes 1, 2, 3 and 4) indicate the various actors involved and the roles they play. One can also glean the knowledge flows between various actors from these matrices. A summary of the analysis of these matrices is presented in Table 4. It is interesting to note that though they involve a broad spectrum of public and private actors, private sector still plays a limited role in almost all cases. The financial sector has not been able to play any role so far, given that all these emerging enterprises do not fall in their traditional loaning sectors. The importance of actors has also been varying over time and as the partnerships emerge. In most cases, even though external agents like IPMS played the catalytic role initially, the government and farmers became important player subsequently, driving the process. Farmers demanding technology and service support is increasingly becoming visible.

Table 4 Roles of actors in Innovation process

Sector	Farmers	Government	Private	Co-ops /Farmer Associations	Co- ordinating bodies	Financi al sector	Research	Extension agents	External agents (IPMS)
Banana	Production initially, later some entered input supply	Facilitation of input supply, training and product popularisation, admin support	Develop marketing linkages, input supply	None	None exist	None	None	Technical back stopping	Facilitation of training, technical support, input supply linkages, market linkages
Onion seed	Production and input supply	Seed certification, technical support and training, site and farmer selection, planning, policy support	None	Creating market linkage	None exist	None	Training, technical support, quality control, improved varieties	Technical backstopping	Planning, facilitation of training, market linkage creation, access to new varieties
Dairy	Production	Technical support, capacity building, farmer mobilisation, admin support	Sharing experiences, breeding service provision	Market development, input supply and service provision	Linkage creation	None yet	Technology provision, capacity building, monitoring interventions	Farmer mobilisation, technical backstopping	Facilitation of technical support, capacity building, market linkage facilitation
Fattening	Production	Capacity building, market linkage creation, feed resources development, vet service provision, admin support	Input supply, technical support, capacity building, feed resources development	Awareness creation, farmer mobilisation	Co-ordinating and managing partnerships	None yet	Capacity building, feed resources development	Awareness creation, farmer mobilisation	Facilitation of capacity building, market linkage creation, feed resources development

Analysing some of these partnerships in-depth brings us to the findings presented in Table 5.

Table 5 Some features of partnerships being analysed

	<i>Metema Banana</i>	<i>Fogera Onion</i>	<i>Ada Dairy</i>	<i>Alamata Fattening</i>
Partnership arrangements	Informal	Informal	Formal	Formal
Type	Actor-based	Purpose-based	Purpose-based	Purpose-based
Relationship	Consultative	Consultative	Coalition	Coalition
Resources commitment	None	None	Yes	Yes
Articulated benefit and risk sharing	None	None	Yes, through dividend sharing	Partial with the PLC
Partnership management	IPMS	IPMS	IPMS	IPMS
Who leads	IPMS	IPMS	Co-operative	OoARD
Who takes decisions	Joint	Joint	Joint	Joint
Level of trust	Very high	Low - Medium	Variable between actors	Medium
Mechanisms to create trust	Demonstration of intent and benefits	None explicit	Demonstration of intent through interactions	Demonstration of intent through interactions
Missing interactions	Research, input supply systems, credit services	Larger markets, co-operative unions, credit services	Para vets, Private Vet drug supply, alternative markets, processing companies, credit services	Para vets, alternative markets, feed services/supply, Private Vet drug supply, credit services
Capacity development				
Which actors	Farmers, Extension agents and experts	Farmers, Extension agents and experts	Farmers, extension agents and experts	Farmers, extension agents and experts
What skills/capabilities	Technical skills	Technical skills, marketing and business skills	Technical skills	Technical skills

6. Lessons learnt so far

Configuration of actors: It is important to vision an innovation system and take care to involve all the relevant actors. The involvement of actors might well be situational, but it is important not to leave out crucial actors, especially decision makers. It is also important to be aware of the policy context in which innovations have to occur. A case in point is Onion seed in Fogera. In the first instance, the BoARD input supply department which is the official seed certification agency was not informed of the efforts to encourage onion seed production by farmers. The written and gazetted policy of the Region which specifies that seed producers have to be at least Diploma holders was not known widely. So, the initiative suffered a huge setback in the first year when the BoARD refused to certify the seed for sale in the market. This was rectified after negotiations during the following year. This underlines the importance of taking up a systematic stakeholder analysis at the outset.

Institutions: The diversity of partnerships evolved reveals that they are a response to a unique set of circumstances and challenges to address in specific contexts. The changing institutional landscapes and increasing complexity of development challenges, requires that various actors come together in formal or informal arrangements to achieve specific purposes. However, institutions (defined as rules of engagement) might be useful as they reduce uncertainty, promote stable patterns of interaction and transactions, and prevent or mitigate conflicts. They may also absorb and diffuse some part of the risk of individual actors e.g., by stimulating markets or providing information.

Learning: Whether the partnerships remain transient or become permanent outfits is dictated by the nature of innovation process and further developments. What is important to note is that the process of joint innovation should not be confined to formal arrangements, but should involve informal collaboration, learning, and exchange of knowledge between individuals and organizations. Such learning is yet to manifest in the cases under study.

Trust: It is interesting to note that benefit and risk sharing mechanisms in partnerships are explicitly articulated when actors from organised CBO or private sector are involved. The levels of trust between partners are also determined based on traditions and previous experiences. Private sector has not been actively encouraged in many Regions due to the socialist nature of previous governments. This is still reflected in the antagonism that government sector exudes towards the private sector in some sectors or Regions. In addition, the importance of mechanisms to create trust is not well appreciated leading to, more often than not, very tentative interactions. For successful partnerships, skills, habits and practices that allow individuals and organizations to interact with each other are critical. Relationships have to be built based on trust in which all partners have a sense of working towards a common and agreed goal. It is therefore, important to understand and address the underlying motivations of partners.

Capacity development: The capacity has to be developed on a system basis leading to building up of a collective capacity of actors interactively linked with a view to innovate.

These examples show that it was important to develop the technical skills of extension functionaries in modern and new technologies along with the farmers, so that local technical backstopping support is always available to farmers who have adopted them. Joint training activities of farmers and extension staff have also provided a way of making extension agents aware of farmers perspectives, challenges and knowledge needs. It is important to develop capacities not just in technical skills, but also in marketing techniques and entrepreneurial or business skills if one is aiming at market-oriented production. These skills are particularly lacking in the case of extension functionaries. What is observed in the cases being studied is that an external agent, in this case the IPMS project, is facilitating the linkages and managing the partnerships to begin with. What is important in terms of capacity development is also building the capacity of the actors to identify the needs, forge linkages and manage the partnership process.

Enabling environment: The government has a critical role to play in creating enabling environments for innovation processes to occur. This may take the form of organizational transformation towards a culture which promotes linking and learning and, development of environment and reward system which encourages innovation and outcome orientation.

To conclude, it is clear from the cases studied that one cannot innovate in isolation. For developing market-oriented agriculture especially, partnerships are crucial. It is also clear that partnerships do not happen automatically, but need to be stimulated. A boundary organization/linkage facilitator is very necessary. IPMS has been playing that role now, however a national actor should be taking over and playing that role in future. This requires an understanding and appreciation of the need for innovation and process of innovation. The importance of linkages, interaction, exchange of knowledge and learning has to be duly appreciated.

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Annex 1 Metema Banana Actor linkage matrix

	OoARD	Woreda cabinet	Banana growers	Sucker suppliers	Chemical suppliers	Wholesalers	Supermarkets	IPMS
OoARD		Administrative interaction	Input supply	Input supply	Nil	Nil	Nil	Training
Woreda cabinet			Popularization through Information Unit	Nil	Nil	Nil	Nil	Policy support
Banana growers			Exchange of knowledge, Supply of inputs	Nil	Nil	Marketing	Nil	Facilitation of Training, inputs, market linkage
Sucker suppliers					Nil	Nil	Nil	Facilitate input supply
Chemical suppliers						Nil	Nil	Input supply
Et Fruit							Marketing	Market linkage creation
Supermarkets								Popularisation of product
IPMS								

Bold indicates strong linkages

Annex 2 Ada Dairy Actor Linkage Matrix

	Ada Dairy Co-op	Dairy Producers Group	OoARD	ILRI-DZ	EIAR-DZ	AAU, Vet Faculty	Genesis Farm	Micro-finance	Bull station	IPMS
Ada Dairy Co-op		Milk Collection Input supply (feeds, vet services and AI) Purchase of forage	Technical Support, Capacity Building	Technical Support, Capacity Building	Technical Support, Capacity Building	Nil	Experience exchange	Nil	Nil	Facilitation of Technical Support & Capacity Building
Dairy Producers		Knowledge exchange	Technical Support, Capacity Building, Group formation	Technical Support Capacity Building	Technical Support Capacity Building	Nil	Milk market	Credit	Breeding service	Facilitation of Technical Support, Capacity Building, facilitation of breeding service, and market linkage
OoARD				Technical support, training	Technical support, training	Nil	Nil	Nil	Monitoring	Capacity building, linkage facilitation
ILRI-DZ					Nil	Nil	Nil	Nil	Nil	Tech support, training
EIAR-DZ						Nil	Nil	Nil	Nil	Tech support, training
AAU, Vet faculty							Nil	Nil	Tech support, Monitoring	Monitoring interventions
Genesis Farm								Nil	Nil	WALC member, facilitation
Micro-finance									Nil	WALC and platform member
Bull station										Credit, monitoring, learning
IPMS										

Bold indicates strong linkages

Annex 3 Fogera Onion Actor linkage matrix

	OoARD	BoARD inputs department	Farmers	Out growers	Union	ARARI	Melkassa Research Center	IPMS
OoARD		Line department	Targeting, site selection, sensitization and advice	Nil	Consultation for input supply & marketing	Training of DAs and expert	Nil	Joint planning, group formation and training
BoARD inputs department			Seed certification	Seed certification	Nil	Technologies and quality control	Nil	Business planning and field control
Farmers			Knowledge exchange	Nil	Marketing support	Training and Technical support	Improved varieties	Facilitation of training, market linkage, technical support
Out growers					Nil	Seed certification	Nil	Group formation
Union						Nil	Nil	Market intervention
ARARI							Nil	Joint planning and implementation of training and demonstration
Melkasa research center								Improved varieties
IPMS								

Bold indicates strong linkages

Annex 4 Alamata Fattening Actor linkage matrix

	OoARD	Woreda Admin	Women'a Assns	Youth Assns	Farmers	Abergele PLC	Microfinance	TARI	IPMS
OoARD		Platform member	Awareness creation, farmer mobilisation, group formation	Awareness creation, farmer mobilisation, group formation	Capacity building market linkage creation, forage development and feed management, animal health service	Group formation and farmer training to be outgrowers	Platform member	Joint planning and implementation	Joint planning and implementation
Woreda Admin			Admin control	Admin control	Admin support	Joint planning and implementation	Platform member	Joint planning and implementation	Joint planning and implementation
Women's Assns				Co-operation	Awareness creation, farmer mobilisation	Joint planning and implementation	Platform member	Joint planning and implementation	Joint planning and implementation
Youth Assns					Awareness creation, farmer mobilisation	Joint planning and implementation	Platform members	Joint planning and implementation	Joint planning and implementation
Farmers					Knowledge exchange	Capacity building, forage development and feed management, input supply	Potential credit source	Capacity building, forage development and feed management	Capacity building, market linkage creation, forage development and feed management
Abergele PLC							Nil	Nil	Platform facilitation, outgrower capacity building
Microfinance								Nil	Platform members
TARI									Collaboration for capacity building
IPMS									

Bold indicates strong linkages