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by

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FOREWORD

The agricultural environment is changing at unprecedented speed and in very diverse ways due to market liberalization and globalization. The urban population in the region is increasing dramatically, accompanied by higher incomes and changing nutritional diets that create greater demand for high-value products. This is juxtaposed by declining public investment in agricultural development, particularly in extension services. The future for many small farmers is bleak unless they can adapt their farming systems to these changes. In order to survive and prosper farming needs to become competitive and profitable.

Agricultural extension plays a key role in raising productivity by offering technical advice on new technologies, helping farmers to identify problems and opportunities and sharing information. This publication presents the findings of a regional study in Asia on the design and delivery of Market-oriented Advisory Services (MOAS) to farmers and rural entrepreneurs. MOAS covers non-traditional extension services that are mainly delivered at the postproduction stage. They are assumed to be provided by both public and private organizations and are targeted not only at farmers but also at other stakeholders along product value chains. Contained within the broad concept are services such as extension, training, group organization of farmers and rural entrepreneurs, producer group development, market and business linkages and the provision of market-oriented information. The term MOAS includes not only those services provided for a developmental purpose, but also private sector-led initiatives providing business services to farmers and rural entrepreneurs.

This publication presents findings from case studies and examples of „successful cases' found through Internet searches, field studies and literature review. Some of these experiences, however, are quite new and insufficient time has elapsed for them to be tested and proven. It may be too early to draw conclusions about what may or may not work. The main purpose of the publication is to highlight some of the perceived „good practices' that can be found in the region. It is intended mainly to provide insight into MOAS at the local level, reviewing the range of advisory services offered and discussing their performance. The publication also addresses some discussion points and identifies outstanding issues and recommendations.

The publication is directed at those institutions involved in extension, value chain/market linkages and business development – i.e. donors, government institutions, civil society and the private sector. Some chapters should also be of interest to support service institutions and policy-makers engaged in supporting service delivery. The examples, together with the recommendations provided, should provide practical advice to all those who are seeking to help farmers improve their livelihoods. We hope that readers will find the issues raised and the practical implications for advisory service providers useful in advancing broader discussion of the role and development of agricultural extension services in linking farmers to markets, enhancing farm income and ultimately contributing to rural poverty alleviation in Asia.

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OVERVIEW

Chapter 1 provides an overview of the changes which have occurred and are taking place in the rural environment – on both the demand and supply side of MOAS delivery – that have led to new opportunities for farmers to participate in the globalized economy. It makes reference to market liberalization, demographic changes, urbanization and the environmental risks and threats facing farmers and other stakeholders. It also describes the shift in extension service delivery from a purely public sector initiative towards a more pluralistic approach that also engages the private sector and civil society.

Chapter 2 explains the notion of MOAS in some detail and describes the type of services provided by MOAS, the main service delivery systems and the stakeholders demanding these services. It includes a section on MOAS and economic theory and develops a conceptual framework for MOAS – as part of an innovation system. It concludes by addressing the issue of cost recovery describing various models that can be found in the region.

Chapter 3 addresses some issues for discussion. A number of questions have been posed relating to MOAS. What should be the role of the public sector in providing MOAS? How can the public sector be revitalized? How effective have NGOs been in MOAS? How can private service markets be strengthened? How can the public sector better collaborate with the private sector? How can public sector support be provided without undermining the market? Should MOAS be subsidized? How can the capacity of the weak be built up optimally?

Chapter 4 points out some of the lessons learned from the study with a particular focus on ‚good practices' and success factors. The chapter uses both the case studies and a review of the broader literature to focus upon key success factors that seem to be important – and in some cases absolutely essential – for the promotion of successful and sustainable MOAS provision. The findings cover both the good and bad experiences of selected topics that include the enabling environment, Information, Communication, Technology (ICT) innovations, private sector service providers, producer organizations, clusters, contract farming, commodity associations and networking arrangements.

Chapter 5 equips policy-makers and programme managers with a set of recommendations relating to MOAS. The chapter provides a set of strategies, principles and practical guidelines that should be taken into consideration in developing the MOAS framework more extensively. The chapter stands back from the individual cases in order to consider the implications for policy-makers and programme managers in current thinking and practice.

Chapter 6 contains a final word on the study summarizing the main issues and suggesting areas of future focus to strengthen and develop MOAS in Asia.

The annex provides short descriptions of some of the case study evidence. It is divided into two parts – public sector-driven and private sector-led interventions. The presentation of the cases includes a short background description, the major objectives and details of the overall programme and the broad approach and experience in providing MOAS.

CONTENTS

1. INTRODUCTION

Demand-side changes

Over the last two decades policies have been implemented globally to reduce the role of the state in management of the national economy and to increase economic liberalization. In Asia in particular, this has led to new opportunities for farmers to participate in economic expansion. Market liberalization has also been reinforced by globalization offering some farmers opportunities to enter regional and international export markets. Demography is another factor contributing to the changing farming landscape. While rural populations continue to grow, more people are migrating and settling in towns and cities. This change has resulted in an increasing number of people in urban areas being fed by smaller numbers of farmers. These changes have been compounded by the rapid increases in economic growth experienced over the last decade. In China and India it has been dramatic, and in 2007, per capita income rose at over 11 percent and 8.5 percent, respectively. While these levels have dropped slightly since the recent financial downturn, there have been signs of economic resurgence.

Rural-urban migration has resulted in significant urbanization with people being absorbed in non-agricultural activities. Urban wage rates have risen quite markedly in some countries resulting in an emerging middle class with more money to consume higher value fresh and processed foods while expecting safety and quality standards to be met. Staple crops, however, are still a major source of agricultural value addition by being disaggregated into a range of products that meet the quality and delivery standards of consumers. There has been a rapid increase of value addition opportunities relative to primary production. As a result of increasing demand, food prices are also rising as part of a long-term trend, aggravated by volatile production. Diets of both urban and rural households are changing and are increasingly including more animal products, such as fish, meat and dairy produce, as well as fruits and vegetables. The availability of new technologies for production, postharvesting and transportation have also changed demand by facilitating the delivery of products in new forms. These changes offer market and employment opportunities for rural farm households. However, they also present challenges for farmers to adapt their farming systems to meet the new market conditions. More freely operating markets require farmers to make more efficient use of scarce resources.

Although this has been an overall trend in the region, there are large regional disparities among countries and areas within countries in the demand for high-value products. Since the onset of rising food prices, some countries in the region have continued and even accelerated their drive towards food self-sufficiency. This has become part of national policy that emphasizes productivity enhancement of rice and other staples. Yet, among those countries that have reached national self-sufficiency, there are market forces that push them towards higher value products. National food self-sufficiency has witnessed a gradual decline in staple food prices, reflected by the relative supply and demand for these products. As their land base is too small to expand production and, with less income, it is increasingly difficult for them to purchase inputs and maintain the same level of productivity. This creates a dilemma for small farmers and has given rise to more diversified production in an effort to increase farm household income. The outcome is a range of factors that ultimately accelerate farm commercialization and encourage market-oriented farming.

Economic growth and urbanization has resulted in the development of more formal market outlets. Farmers are increasingly becoming more integrated into value chains that extend from input suppliers to consumers. Agroprocessing enterprises are stimulating demand for farmers' produce as well as market-induced innovation. This is occurring through the development of value chains that respond to consumer demand. In this new form of modern agriculture, exporters, retailers and agroprocessing enterprises often provide crucial inputs and services to the farm sector. Additionally, private sector standards for food quality and safety are proliferating and transactions of foods are increasingly being arranged through the use of contracts.

The force of these circumstances is leading to more robust and competitive commercial agriculture as more and more farmers are entering the market with farm products for sale. Consequently competition is high. As commercial production becomes more sophisticated and specialized, more complex and specialized support services are also required.

Yet, while economic liberalization and globalization have produced opportunities, they also carry risks. Limited agricultural productivity and market access are major barriers to rapid agricultural growth, especially among small farmers. In many areas of the region, holdings are small and often fragmented. Institutional credit for farming is not readily available for smallholders. Moreover, the global recession and financial crisis have resulted in less capital for farmers. Farmers increasingly complain of lack of access to finance – working capital and investment – and there are increasing instances of farmers finding it difficult to raise capital. Where the possibility of obtaining finance does occur, banks are often reluctant to lend to small-scale farmers. As a result farmers face difficulties in expanding the size of their farm businesses and taking up new opportunities that arise. They are also forced at times to make distress sales, selling their produce at prices lower than the market rate in order to repay the high costs of loans, especially from intermediaries. These challenges are heightened by the unavailability or high price of purchased inputs in local markets. In order to respond to these challenges farmers also have to compete more rigorously among themselves and those that can make their farms more competitive and profitable will be in the best position to take advantage of opportunities that could earn them more money.

Against this backdrop, there are also environmental threats impacting on the success of small-scale farming. Of significance within the region, and of course globally, is climate change. The expansion of arable cropland has decreased considerably, soil nutrient depletion is prevalent and in some countries and fragile regions within them, land degradation and desertification are accelerating; together with water scarcity these factors threaten rural livelihoods. The combination of climate change, the growing world population, economic growth and the limited natural resource pool are creating serious long-term problems of environmental sustainability. As a result of these trends there is an urgent need for farmers to respond to environmental changes by adapting their farming systems in an attempt to sustain both productivity and income over the long term. As farmers become more market driven they have to recognize that short-term productivity, profitability and income achievements are often unsustainable because inadequate attention is given to the management of the natural resource base.

Farmers' skills and capacity to better cope with this changing economic and natural environment need to be enhanced. Income growth has to be viewed as a long-term objective and resources and efforts are needed to educate farmers on how to manage their natural resources in a sustainable manner. This is vital to ensure that the income generated from their farms can be sustained over time. To retain viable livelihoods, small producers need to move from a focus on production for home consumption and occasional marketing of surpluses towards a more commercial and business orientation where they have the capacity and skills to respond to the ever increasing demands of the market. In order to run their farms as a modern business venture, farmers require the skills and competencies to adapt their farming systems, diversify production and respond to market change. The challenge facing farmers is to adjust their farm-household systems to these changing market conditions and opportunities. Farmers are working in a more competitive environment where in order to increase their income from farming they need to become more profitable and adaptable to change. These trends have had a direct effect on both the demand for skills improvement and the competencies needed to promote market-oriented farming.

Supply-side changes

Structural adjustment has been a critical dynamic to the changing composition of the farming sector. In the 1970s and 1980s the International Monetary Fund (IMF) and World Bank launched their Structural Adjustment Programmes where lending to countries became conditional on public sector reform. As part of the programmes, emphasis was placed on supply-side, efficiency-enhancing adjustments which had a direct impact on the provision of public sector support services. Structural

adjustment attempted to reduce state subsidies, re-align extension services and increase the role of the private sector. Measures were introduced to ensure stabilization and increase the efficiency of service delivery. These policies have had long-lasting ramifications on public sector agricultural extension services resulting in:

- A shift in the traditional public sector role of farm extension services towards greater involvement of civil society and the private sector;
- Decentralization of public sector services; and
- Increasing restriction of government investment in the provision of public goods.

For a long time, extension had been highly dependent on the public sector. However, with public sector reform calling for downsizing or streamlining of its capacity, coupled with shrinking public resources, investment has been low and outreach limited. The trend has shifted from public sector delivery, which was regarded as outmoded, towards promoting a broad variety of actors in the provision of advisory services.

In a market-oriented economy, a pluralistic approach to extension service provision must be promoted, because extension services need to be more specialized and diversified. This should provide farmers with a greater choice of services of better quality, and will enable them to develop the skills required for a market-oriented economy. In some countries private sector service providers have supplemented extension services by offering management advice on a cost recovery basis. Attempts have also been made by some governments to contract out extension service delivery to specialized private sector firms under competitive bidding. Structural adjustment has also resulted in a growing role for civil society and farmers' organizations have also expanded their roles in developmental activities.[1]

Farmers are now organizing into different types of farmer and producer groups (i.e. creating social capital) to increase market access and more effectively articulate their goals and needs to policy-makers, researchers and extension providers.

The shift towards a pluralistic range of advisory services has been accompanied by a movement towards decentralization.[2] Centrally controlled and standardized extension approaches have failed to respond to local priority needs and have been less efficient in the use of scarce resources. Through decentralization, extension services are accountable to those people who demand and use them.

With a more demand responsive approach to extension advice involving the private sector, civil society and decentralized public extension, the nature of extension has also changed. Historically, the primary objectives of agricultural extension and advisory services were concerned with transferring technologies associated with the major crop and livestock production systems in an effort to increase productivity. The model called for dissemination of technologies through the research-extension-

1. Civil society refers to organizations that operate to enable citizens to coordinate their efforts, but are neither part of the state nor part of the market. They include both formal and informal associations such as NGOs, trade unions, self-help groups and producer organizations.

2 The term „decentralization' has been used in the literature to describe four alternative institutional arrangements: deconcentration, delegation, devolution and transfer to private firms and NGOs. These institutional arrangements reflect different combinations of the decentralization factors. *Deconcentration:* Under this institutional arrangement, selected managerial functions (e.g. programme planning and implementation) are assigned to district and local levels within the national-/provincial-/state-level agricultural extension system. *Delegation*: In this form of decentralization, a semi-autonomous government agency may be assigned responsibility for providing or coordinating extension services on a territorial basis. Also, some managerial, priority setting and fund allocation functions are delegated to district-level extension systems. *Devolution*: Under this arrangement, programme planning, management and co-financing responsibilities are transferred to local and/or district-level governments. These local governments have discretionary authority to exercise their responsibilities and are bound only by national policy guidelines. *Transfer* (of specific extension activities) *to private firms and NGOs*: This approach is much more commonplace in industrially developed countries as the technology transfer function is increasingly privatized.

farmer communication system. Progressively, by following client demand, a new strategy was pursued that sought to improve rural livelihoods by increasing farm income and rural employment. At this juncture, a paradigm shift occurred where advisory services focused more of their resources on improving rural livelihoods rather than production with an emphasis on the market while enhancing the skills and knowledge (i.e. human capital) of farmers and rural families so they were better positioned to:

- Select the most appropriate mix of crop and livestock enterprises;
- Use the most efficient production management practices;
- Increase farm household income and subsequently enhance rural livelihoods and household conditions; and
- Improve management of their natural resource base.

The need for farmers to be more involved in the market economy creates a diversity of demands, such as the type of products required on the market, the type of inputs needed and the most appropriate production system. As market orientation expands and production becomes more commercial, more complex and specialized services are required; they can only be provided by highly qualified providers. There is clearly a need for a pluralistic range of advisory services to support the changing agriculture sector. However, because of the existing bureaucratic structure and procedures of many public extension systems, developing a more pluralistic public-private extension system is not simple. For the vision of pluralistic, decentralized and demand-driven extension to become a reality, public sector reform is paramount and a broad coalition of advisory service providers is necessary with each making an important and distinctive contribution.

The inadequacies of direct advisory service provision are being met by information technology – mobile phones and the Internet. The ICT revolution has expanded considerably over the last decade and together with radio and television has provided new opportunities for information exchange. The fast advances in this field are rapidly changing the way people are living. Information technology is tremendously powerful and needs to be harnessed by extension organizations for the benefit of farmers and other stakeholders. Agricultural advisory services need to exploit this potential to strengthen their own capacities and to educate farmers and rural households that have access to them. As farmers make the transition towards commercial farming and advisory services are responding to provide market oriented support, ways are needed to increase their access to market information, technologies and business opportunities.

2. MARKET-ORIENTED ADVISORY SERVICES (MOAS)

What is MOAS?

MOAS consists of knowledge services aimed at assisting farmers, rural entrepreneurs and other actors in agricultural value chains to increase their access to markets and realize benefits from commercialization (Neuchatel Group 2008). These services include a range of economic, social technical and legal services that include:

- Technical expertise aimed at generating value by increasing the volume and quality of production and the timing of the supply of raw materials
- Economics, marketing and business management expertise (e.g. farm enterprise anaysis, marketing information and business planning etc.).
- Post-production expertise aimed at creating value along the value chain through improved post harvest handling, packaging, storage and distribution, while meeting food safety and quality requirements.
- Support in strengthening producer and other value chain stakeholder groups through improved collective marketing, business management, financial management, leadership, negotiation skills and linkages with research institutions for innovation.
- Support in facilitating value chain development and strengthening through improved coordination of production, negotiation of contracts, brand development, linking producers to buyers as well as providing advice on legal, regulatory and certification issues
- Facilitating institutional changes – forming producer organizations, clusters, networks and linkages among different actors along value chains (e.g. convening multi-stakeholder forums to understand market opportunities and constraints along value chains, develop contractual and trust relations).

Advisory services by themselves, however, are often not enough to get farm products from the farm to the consumer. Advisory services need to be supplemented by a range of more „tangible' services that include input supply, livestock, transportation, collection, packaging and finance so that farmers and value chain actors are able to use the advice that they receive effectively. The relationships among some of these services are presented in Figure 1.

In addition to the service „software', physical infrastructure investment in roads, collection points, markets and so forth is also necessary to secure these linkages. If small-scale producers are to benefit from infrastructure investments they will usually need support services and advice as well. In order to have a sustainable impact on farm commercialization and linking producers to markets, MOAS is often regarded as part of a package of support that integrates services and infrastructure in way that links them to market demands.

Information – when customized and provided by appropriate institutions – is one of the services in highest demand by farmers and rural entrepreneurs. Information services include market information and information on market linkages, providing a variety of information, including selection of market outlets and potential business partners. Other forms of information exchange at the level of the farm community include study tours, the establishment of forums for dialogue exchange and the development of information flows among farmers. Information is also needed to assist farmers to diagnose their farm performance, to set objectives, to plan, implement and control farm activities and to make more efficient use of their limited resources. Farmers also require regular long- and short-term information on markets and marketing. Information is needed on market outlets, market prices and

ways of improving the quality of production and sales. Farmers are looking for advantageous prices when selling their produce and when buying inputs and materials, as well as reducing costs of inputs and marketing. They are also seeking larger markets for produce sold and consequently need to maintain constant contact with buyers, processors and consumers so that they know what they want. Information can have a direct impact on improved farm management, providing extension workers and farmers with information on what, how and when products are produced, and what type and quantity of inputs should be used. The better skilled they are at using data and information the better their farm decisions will be.

The value chain actors are increasingly regarding marketing information as vitally important. Data and information are needed from on-farm activities, as well as sources outside the farm. Data and information requirements relate to both production and marketing – both of which are vital to the profitability of the farm and competitiveness of selected value chains.

Value chain stakeholders also require timely information on government policies and regulations, as well as a plethora of other practical matters. Policy-makers, in turn, also require micro-level farm management information for better policy formulation and programme design. Clients of this source of information are often interested in predicting farmers' managerial responses to different policy interventions.

MOAS information for decision-making

- What technological options could be used profitably, bearing in mind the potential resource constraints in terms of land, capital, labour and knowledge?
- How to better manage the various technologies (e.g. how to make optimal use of new inputs on the farm)?
- How and when to change the farm enterprise combination (e.g. diversifying from crop production to mixed farming or vegetable or animal production)?
- For which type of products is there a good demand in the market?
- What are the quality specifications that are needed to ensure good value for produce?
- How, when and where to buy inputs and sell products?
- How to make decisions collectively on resource use and marketing?
- How to find quickly the most relevant and reliable knowledge and information?
- What are the feasible off-farm income generation options available and how dependable are they in the long term?

MOAS as an innovation system

Since 2006, the World Bank has been promoting an agricultural innovation approach for agricultural development that draws on the concept of the Agricultural Information System (AIS). The Bank defines the concept as *the 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 a system's behaviour and performance* (World Bank 2006). It extends beyond the creation of knowledge to encompass the factors affecting the demand for and use of knowledge in novel and useful ways, providing new insight as to how the agriculture sector can make better use of new knowledge and foster innovation. The traditional view regarded scientific research as the main driver of change, generating new knowledge and technologies that could be adapted and transferred to specific situations. This linear model of technology transfer was superseded by the Agricultural Knowledge and Information System (AKIS) model and more recently the AIS concept. These more recent models recognize change as an interactive process of both individuals and organizations having different types of knowledge within specific policy and institutional contexts. The AIS concept provides a convenient framework that takes into account two main factors affecting the innovation process: (i) the actors that initiate change and innovation can come from either the public or private sector; and (ii) the factors that trigger innovation stem either from the policy

environment or as a response to market changes. With these conceptual developments the AIS framework can be enriched by understanding MOAS and its contribution to the innovation system. Figure 1 presents a conceptual framework that captures the main elements of the MOAS system, the linkages between its components and the institutions and policies. The conditions cover the macroeconomic policy (fiscal and monetary controls) for business; the regulatory framework that supports MOAS; the legal framework (including land property rights and commercial law); basic infrastructure for service provision; and public governance of input and output markets. These constitute the enabling environment for market-oriented changes.

Policy incentives can be used to stimulate the demand for change as well as innovation – through improved technologies and management practices. However, knowledge, information and technology are increasingly being generated, diffused and applied through the private sector. Policies, moreover, are only a part of the equation and markets, not production, are increasingly driving agricultural development. ICT growth has further transformed the ability to take advantage of knowledge developed in other places or for other purposes.

The framework is useful in understanding the complexity of the MOAS system. The system integrates farmers (often in producer organizations), researchers, extension workers, various private sector actors (including traders, input dealers and supermarket procurement officers) and Civil Society Organizations (CSOs) active in rural areas to harness knowledge and information from various sources for better farming, processing and marketing to improve livelihoods and agribusiness development. Providing diverse extension and information services to rural people necessitates a diversity of public and private service providers on both the supply and demand side of the extension services market.

The different institutions within the MOAS framework can improve access to information and especially information relating to the market, the business and its legal aspects. Research and knowledge management capacities are also a vital part of this system and critical for innovativeness. Organization of farmers and rural enterprises into producer organizations at all levels and increasing the bargaining capacity of their members is another aspect of the enabling environment. Finally, it involves improved governance and administration of public sector institutions, greater civil society participation and stronger government interaction with the private sector with the intention of creating greater transparency.

One aspect of the framework presented in Figure 1 is the different dimensions of advisory service provision. These include: (i) the type of service provided; (ii) the actors in the service system; (iii) the functional relationships within the system; (iv) the level and scope of services; and (v) governance conditions. Different types of relationships among actors – both as service providers and users – can be found. Commercial service providers usually compete in providing goods and services for a market. However, there are also private service providers who coordinate and cooperate mutually, particularly after recognizing the potential benefits that can be generated by being part of a value chain. Relationships also develop between service users, which are determined by the purchasing behaviour of individuals and households who buy goods and services for personal consumption. Stand-alone MOAS interventions are inadequate to create sustainable and functioning markets over the long term.

As noted above, innovation and change are expected to emanate from the research establishment as well as the private sector – in particular farmers and rural entrepreneurs. The MOAS system recognizes the importance of technology transfer but views it from a wider perspective that gives credence to additional support services, among a broader group of stakeholders (not only farmers), and supplied through a pluralistic system of service delivery. In addition to technical change, the expanded perspective of the MOAS system includes the social and institutional innovations that are required to bring actors together, get products to the market, ensure competitiveness and profitability, and establish linkages and networks among producers, processors, traders and service providers. By broadening the focus of the MOAS to a system, the possibility for more comprehensive and sustainable support exists.

Innovation is increasingly being induced by the market and the response of farmers and entrepreneurs to consumer demand. Knowledge is created, used and shared as a response to the increased speed at which the farming and rural community must move to remain competitive. Most innovations arise in response to the potential for added value. Value addition is often associated with niche opportunities exploited during postproduction (quality, processing, storage, packaging and marketing) and with traditional opportunities to add value (increasing the volume, value, or size of an operation) (Rajalahti et. al, 2008).

The schematic framework creates room for linking parallel development efforts that build capacity – for example linking producer organizations with public sector extension investments. And capacity development involves the task of creating networks of value chain stakeholders, building links between these networks so that research can be used in rural innovation and developing skills and competencies to better manage businesses and organizations. This is reflected in the capacity-building domain of the system.

In conclusion, MOAS can be viewed as part of an innovation system that embraces the totality of actors needed for effective market-oriented innovation to take place. The systems perspective described above also highlights the importance of the enabling environment – both regarding policies and institutions – for MOAS to develop and expand. There are clear roles to be played by public agricultural extension systems, private-sector firms and NGOs in transferring agricultural technologies and diversifying and improving rural livelihoods. The case study evidence included later in this publication provides information that should help to clarify the roles of different types of advisory service providers and how institutions, organizations and private sector bodies can work more closely together in promoting rural innovation and change in rural areas in Asia.

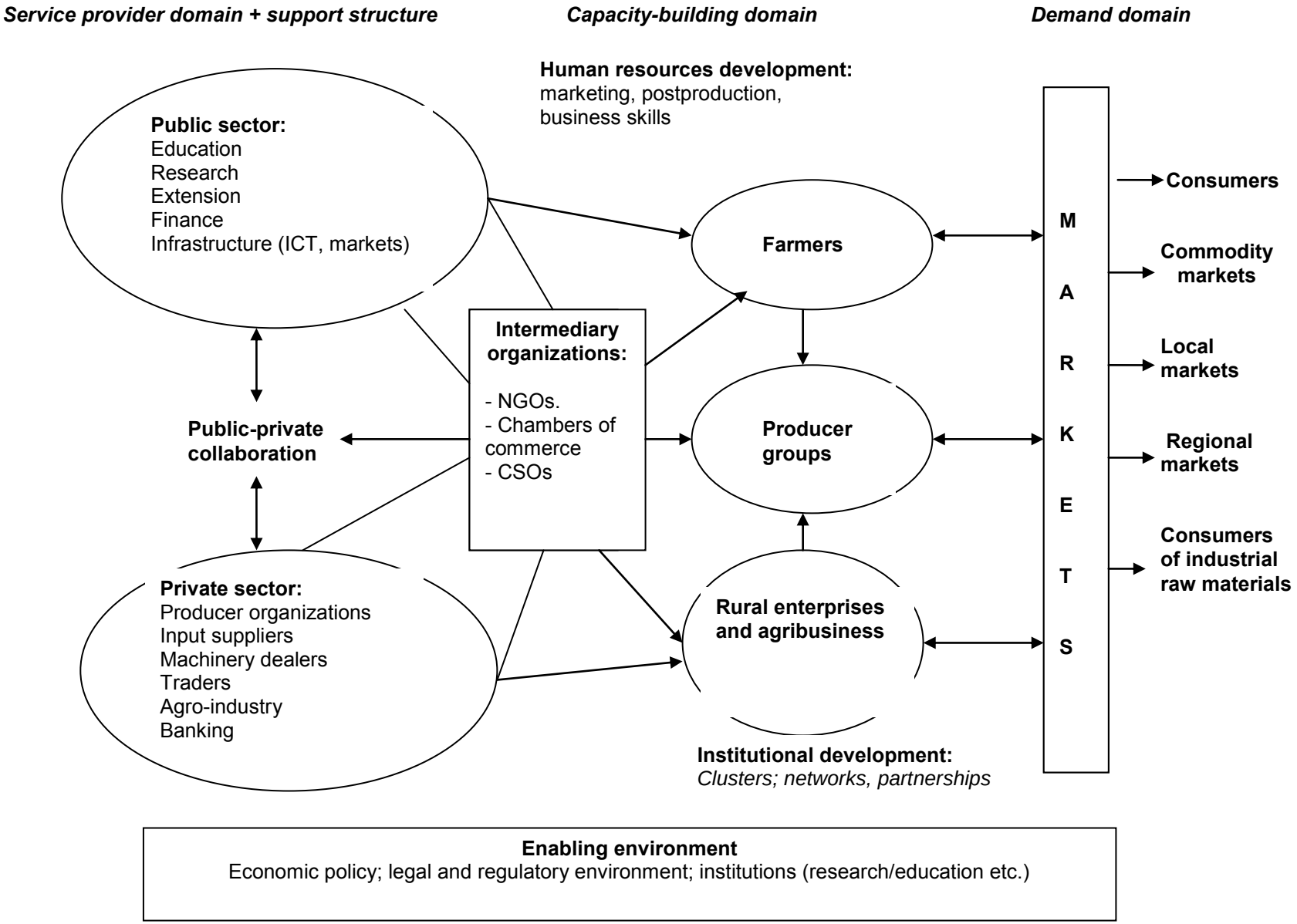
Service provider domain + support structure
Capacity-building domain
Demand domain
Human resources development:
marketing, postproduction,
business skills
Public sector:
Education
Research
Extension
Finance
Infrastructure (ICT, markets)
Farmers
Intermediary organizations:
- NGOs.
- Chambers of commerce
- CSOs
Public-private collaboration
Producer groups
Private sector:
Producer organizations
Input suppliers
Machinery dealers
Traders
Agro-industry
Banking
Rural enterprises and agribusiness
Institutional development:
Clusters; networks, partnerships
MARKETS
Consumers
Commodity markets
Local markets
Regional markets
Consumers of industrial raw materials
Enabling environment
Economic policy; legal and regulatory environment; institutions (research/education etc.)

Figure 1. The relationships among MOAS

MOAS and economic theory

From the economics' perspective MOAS services can be regarded as private or public services depending on the degree to which they exhibit the two key properties of *excludability* and *subtractability*. Excludability applies when access is denied to those who have not paid for the product (they are excluded from consuming it); while subtractability applies when one person's use or consumption of a good or service, reduces its availability to others (Feldman 1980; Kessides 1992). Services that are both highly excludable and highly subtractable are private services and are typical candidates for private service provision. An example of a pure private good is input provision that can be provided efficiently by the private sector and exchanged in the market. The high subtractability and excludability characteristics of particular services and goods allow private service providers to capture reasonable returns on their investments, and given competitive markets, to supply these services at optimal levels. Private goods and services benefit the person who acquires them and as a result people are usually willing to pay for these services and the private sector is usually willing to supply them. A pure public good**,** on the other hand, has low excludability and low subtractability. If the good or service is available to one person, it is available to all. Air is a good example. Private service providers find it unprofitable to supply public goods, because it is difficult to restrict use only to people who pay for them.[3] In this context it is usually up to the government to produce or finance the delivery of these goods and services. Although these classes of goods and services are theoretically discrete, in practice most services and goods contain elements of the characteristics of both public and private goods.

In between these two extremes of purely private and purely public service are so-called toll services – characterized by high excludability but low subtractability. The ability to exclude those who have not paid means that profits can be fully appropriated and this provides incentives for private provision. An example of a toll good is the use of cattle dip facilities. The use of a dip by someone does not prevent others from using it, but those who are not prepared to pay the price can be excluded from using it.

Common-pool goods are subtractable but non-excludable; increased competition diminishes supply for others but there are no incentives for private sector supply because access cannot be restricted. The goods are individually consumed and it is nearly impossible to exclude others from using them. This is the situation when services are provided for members of producer organizations. All members are likely to have access to a service paid for by the organization. Public regulation, however, may be necessary where market imperfections exist: in order to establish property rights, create conditions for competition and quality standards for the toll services. Public sector intervention is also warranted where there are concerns related to market power, equitable access to services and goods, or to the optimal and efficient provision of the service (Umali and Schwartz 1994).

The main classes of public and private goods and services are given in Table 1.

Table 1. Characterization of public and private goods and services

Type of good	Subtractability	Excludability
Private good	High	High
Public good	Low	Low
Toll good	Low	High

Adapted from Umali and Schwartz (1994).

MOAS is also associated with the provision of information. Information is characteristically a public good but this depends on: (a) the nature of its provision (mass media or personal contact), (b) its speed of diffusion and time sensitivity, (c) whether it is tied to or included in physical inputs and (d) whether the supplier of information is also a buyer of the produce (embedded). Pure market and business-

[3] This is known as the „free rider' problem.

related information which is not embedded in a physical product is generally regarded as both non-subtractable and non-excludable. In the short term, however, it may be possible to exclude non-payers (free riders), particularly where the service involves individual contact. This includes new techniques and practices that are not directly observable or cannot be copied by neighbouring farmers and market information which can be easily concealed or withheld and can become rapidly outdated over time (time sensitive). In such cases extension of information may be considered a toll good and potentially attractive to private suppliers.

The categorization for some services also varies depending on the time frame. In the long term information is often a public good as it is propagated among farmers. Over the short term the service can be regarded as a toll good with high excludability and low subtractability. Over the longer term, excludability is reduced as other service providers enter the market. If the information is disseminated rapidly there is an incentive for farmers not to pay for the information and „free ride' by obtaining the information from other farmers. This problem may be overcome by encouraging the formation of producer groups which, through membership fees are often able to recoup the costs of extension information. When treating service provision dynamically, providers of services can be situated in either the public or private sector – depending on the characteristics of the service in question and the time frame.

Another aspect of advice that confounds this categorization is the method of communication and extension used. Information provided through mass media, such as radio, is inherently public in nature and is unlikely to be provided through the private sector, although private financing is used to advertise specific products. Where farming practices are more commercialized and specialized, the corresponding extension services needed to support these activities also become more client and situation specific, and therefore more exclusive. Under such conditions, extension is a toll good and amenable to private provision and user charges.

Where market advice is associated with new technologies, innovations or inputs which are essentially private goods there is no presumption that the supply of the technology and the supporting technical information will be less than is socially optimal (Umali and Schwatz 1994). However, where extension involves technology that is itself non-excludable or can be easily replicated there will be limited incentives for private supply and extension can be considered a common good.

It will be easier for the supplier to appropriate the benefits of advisory services when the supplier is also the buyer of the produce. For example, private agroprocessors will provide advice if the resulting benefits to the processor of a more reliable and higher quality crop exceed the cost of providing the advice. Extension is therefore often a common component of contract farming schemes.

With the advent of market economies there has been an upsurge of value-adding technologies and most of these new innovations (including conventional technologies developed by the private sector) are proprietary goods. In contrast, production management technologies include both a broad range of general management information as well as specific business management recommendations for particular farm enterprises. Some of the more general market and management information can be regarded as public goods while the more specialized aspects of business management are private.

As noted before, information technology is tremendously powerful and needs to be harnessed by extension organizations for the benefit of farmers and rural businesses. ICT in the form of mobile phones, television, radio and personal computers, has an important role to play in informing farmers about management and marketing issues and has the potential to erase physical barriers. ICT provides a dual communication system with interaction between the sender and receiver of information. While radio and television communication is of a public good nature, computers and cell phones that are introduced to assist rural people to more effectively manage their farming systems can be regarded as private goods.

In summary, production technologies and postharvest equipment can in many cases, depending on their use and specialization, be considered as private goods while the management skills needed to use them could be considered a public good if they are general and non-specialized. As advice becomes more product specific and specialized it takes on the characteristics of a private good. Hence, various types of extension activity occupy different points on the public-private good spectrum and this conceptual framework is very useful for budget allocation decisions within public sector extension services.

Demand for services

MOAS clients can be found on each tier in the value chain. They typically range from input providers, farmers, producer organizations and processors to small and large traders, exporters and retailers. Other organizations, such as financial service providers, often also need advisory services to better understand the market prospects for their potential clients. In order for the value chain to function competitively, the actors along the chain require expertise and advice and must develop a sustainable and trusting relationship with the service providers. MOAS looks beyond the problems of farmers and addresses the challenges faced by other value chain actors, in order to improve the competitiveness of entire value chains.

Nevertheless from a pro-poor perspective, the most critical actor in the value chain to receive advisory support is the smallholder farmer. Farmers, however, are not homogeneous in their advisory service needs. The demand for advice varies depending in their socio-economic characteristics and more specifically the size of their farm household, the quality and location of the resources under their management control, their access to other physical and economic resources (e.g. credit, inputs, transportation and markets) and their technical and management skills. Because of these differences the information and advisory needs of farm households differ from country to country, region to region and culture to culture.

The major characteristics of these different farming groups as well as the other actors in the rural areas are described below.

Marginal and small farmers: Marginal and small farmers represent the largest group found in Asia. In India, for example, they comprise between 75 to 80 percent of the farming community. This category of farmers can be divided into marginal subsistence farmers operate holdings of less than 1 hectare and more market-oriented smallholders often with holdings of between 1 to 2 hectares. Subsistence farmers tend to pursue food production strategies aimed at ensuring sufficient staple food crops and household self-sufficiency, particularly over the „hungry season'. While traditionally these farmers have been largely subsistence they are now being brought closer to the market by improved rural infrastructure and the pull of increasing market demand. Some of the surpluses of staple crops (10-20 percent of produce) is sold in the market. These farmers tend to have severe handicaps in commercializing their farming operations: their level of education is low; they tend to be risk averse to making substantial changes to their farming system; their knowledge is often limited; and most lack the skills necessary to utilize technical and management information. In addition, in some countries, the size and quality of their land and water resources also impede successful competitive farming. Given these constraints the more subsistence-oriented farmers tend to be less willing to adapt their farming systems and commercialize.

Among the category of small farmers, there is an increasing number who are becoming more market-oriented. With improved market opportunities and greater support services, many of them are building their asset base, adopting new production processes that are more suitable to the environment and making the transition to commercially-oriented farming. Some 20 to 30 percent of their farm produce is sold in local and regional markets. The potential for broad-scale impact among this group is high with increasing numbers becoming more market-oriented. These farmers, especially with a more prolific natural resource base with available land and labour resources, are endowed with the potential

to diversify production and produce high-value crop or livestock products as well as value-added processed goods.

Medium-scale farmers: Medium-scale farmers typically cultivate between 2-5 hectares. These farmers have a more prolific resource endowment often with access to water and markets. They represent a category of farmers who are more easily reached by agricultural extension workers and private sector input supply dealers and buyers. Medium-scale farmers tend to be less risk averse than the small farmers often with access to credit and support services. These farmers are more likely to produce high-value crops or products, depending on their land and labour resources. They are also usually more educated (with at least some primary and secondary education) which means that, as a group, they are likely to be more aware of new technologies and practices. Farmers, in this category, are usually innovative, progressive and more market-oriented. Given their higher socio-economic status within the rural community, they are often lead farmers and are more likely to be members of producer groups and associations; this increases opportunities for access to inputs and markets.

Commercial farmers: Commercial farmers are often regarded as large farmers with a landholding size in excess of 5 hectares and a more capitalized farming system. Larger-scale commercial farmers are usually better educated and more progressive. They tend to be less dependent on advice provided by extension workers unless they can gain access to new varieties or technologies. Many larger-scale commercial farmers are more influenced by other entrepreneurial farmers and they receive support through private sector advisory services rather than public sector extension. They are often linked to agricultural research organizations. Some innovative and progressive farmers attend meetings at universities and other research institutions to gain immediate access to new varieties or other technologies being released by them and/or the private sector. Finally, given the growing role played by transnational companies, commercial farmers are increasingly obtaining production inputs, as well as technical and management information directly from private sector firms.

Rural women: The importance of women within the rural household has traditionally been understated. They are a most valuable, yet frequently overlooked resource in their contribution to the household economy. As farmers, women are often engaged in cultivation of food crops while the male farmers are responsible for higher value crops and livestock. But this distinction varies markedly in Asia depending on culture and societal roles. The new market opportunities are, however, breaking down traditional barriers and in many countries women are encouraged to produce vegetables, fruits and other high-value products. In some situations they prefer to work as part of a self-help or production group together with other women. By doing so, the level of production can be expanded as well as the sales of these products in markets. As such their strategic role in contributing to farm income has considerable potential to increase substantially.

Producer organizations: Among farmers, the promotion or encouragement of viable farmer groups, especially for small-scale, less highly capitalized producers, is critical to the continued development of agricultural markets and agro-enterprises in the changing global economy. Organizing producer groups is an important way for farmers to address a range of constraints to agricultural production and marketing. These groups may provide better access to sources of production equipment, supplies, technology and markets, as well as create the opportunities for improved market and policy bargaining. They enable smallholder farmers to gain access to the collective information, skills, knowledge and experience of their members as well as to the power and social capital that their combined numbers and assets provide. Producer organizations are particularly attractive for more vulnerable members of the rural community and can be economically advantageous in promoting the business of farming.

Once local organizations have developed the capacity to manage as independent entities they can be organized into higher-level apex institutions and associations. Consolidation and leveraging can be achieved by joint input purchasing, by common ownership of fixed assets, by consolidating output and by coming together to form an association. Successful associations will eventually become self-supporting. The organization of farmers also provides a political forum and „voice' to more effectively

lobby for common interests. Government policy can ultimately be influenced through the establishment and development of lobby groups such as farmer processing and trade associations.

Producer organizations, however, suffer from a number of capacity constraints including low business and organizational skills, low educational levels of managers, leaders and members combined with weak organizational structures and procedures that hinder responsiveness to new opportunities and constraints. Producer organizations also often lack market information and awareness about international opportunities, certification requirements, trade and marketing standards and other international guidance.

Rural youth: Asia, as in other parts of the developing world, is experiencing high rates of migration of rural young people to cities and away from rural areas and this dynamic is inadequately addressed by national governments. The younger generation is seeking new employment opportunities and ways of making a decent and reasonable living. MOAS has a role to play in mitigating this exodus. In Asia, only a few developing countries – Indonesia, Thailand, Philippines – have established nationwide rural youth organizations with a focus on providing them with training in leadership development. Considerably more can be done to prepare them for modern farming. Communicating to young people that farming can be run as a business and can provide good income opportunities if managed efficiently is an important message that needs to be conveyed. Rural youth need to develop business acumen and the skills to treat farming as a business. This is particularly important as they inherit the land and farming operations of their elderly parents.

Rural entrepreneurs: Rural entrepreneurs include a diverse range of value chain stakeholders with varying capital endowments and entrepreneurial potential. They include small-scale traders, input and equipment dealers, agroprocessors and retailers such as supermarket chains. In order to ensure value chain competitiveness there is often a need and demand for information and skills development programmes among this varied range of stakeholders. It is difficult to know exactly what form of MOAS support each entrepreneurial category will demand but in general this includes a better understanding of the concept of value chains, market price information, basic business, finance and marketing skills and contracts – negotiation and compliance. All of these stakeholders should also have an understanding of linkages among actors and the importance of setting up partnerships as a strategy to boost competitiveness.

Rural entrepreneurs require support to better understand the changing agrifood system and the integrated system of relations and interactions with different actors with specific value chains. Traders need to have better knowledge of quality and safety issues as well as management information systems (MIS). Input dealers need to understand more clearly the importance of quality and reliability of inputs and materials as well as technical recommendations for their application and use. Agroprocessors often require support in business management – simple procedures to plan, monitor and control the business. Other issues such as production scheduling, finance, inventory management, quality management and staff management are also useful to know. Agroprocessors also need a better understanding of contractual relations and the development of mutual trust.

Provision of services

Public

Public advisory service organizations range from traditional line agencies dealing with crop and livestock extension to services decentralized to district, municipal and community levels. The public sector services in Asia have been criticized for being supply-driven, technically weak, focusing on better-off farmers and with insufficient coverage and contacts with farmers. However, these services vary widely between countries, regions and districts within them. In some countries extension is highly centralized with varying forms of regional and subregional units designed to serve local areas whilst in others they are decentralized. There is similarly a great diversity in skill levels and agricultural competence of field staff and these variations are also reflected in the provision of MOAS. While

traditional advisory support has been production-oriented there is now increasing recognition of the need for substantial reorientation if they are to provide effective MOAS. Besides the trend towards greater pluralism in service delivery in areas where there are few service options, the public sector may be the only available service provider. Consequently there is still a strong need for a well performing public sector extension service that is leaner, cost-effective and has a different role than in the past.

There are examples of the public sector playing a predominant role in the provision of MOAS in the Asia region and attempting to reorient itself. The two largest public sector extension systems are found in China and India and over the last two decades they have undertaken far reaching changes. In India progress has been accelerated with the support of donor-funded projects that have focused efforts on promoting commercial agriculture through the formation of Self-help Groups (SHGs) and Farmer Interest Groups (FIGs) that produce and sell high-value products.[4] This called for the extension service to broaden its area of expertise. In China, the transition to a more market-driven extension system occurred in the 1990s when Specialized Farm Households (SFHs) and their respective commodity associations began making technical demands on extension to support the development of high-value crops and enterprises. The association began demanding assistance from specialists of the County Agro-Technical Extension Centres (CATEC) to provide more specialized technical advice and training. Another example is the case of Sri Lanka, where the Department of Agriculture in an effort to promote commercial agriculture set up the Agricultural Enterprise Development and Information Service to promote agro-enterprise development and farming as a business.

Private

Independent private service enterprises: This group ranges from independent, traditional local service providers to larger-scale consulting companies and training institutions. Most commonly in Asia local private sector service providers predominate and include suppliers of seed, livestock, agrochemicals, animal feed, veterinary medicines and equipment. There are many public sector-funded schemes in southern Asia that aim at developing this cadre of private service provider. India, Bangladesh and Nepal provide a range of examples. In Nepal, the government has set up a system of Agrovets that are entrusted to supply inputs and materials to support crop and livestock production. While these are wholly private entities, the government has a role in providing licences and training. In Bangladesh, there are schemes, such as those funded by the Swiss Agency for Development and Cooperation, which have been operating since 2003 in the northwest of the country and are aimed at promoting farm enterprise development. These initiatives were designed around the notion of farmers' willingness to pay for services offered.

Community-led extension: Community-based service providers are promoted in many places by development agencies and increasingly by governments. In a number of development projects in Asia, community-level marketing extension workers have been trained to link farmers to markets and provide basic expertise in MOAS to fellow villagers, liaise with external actors and provide a modicum of private services in areas where the more professional private providers are unwilling to invest. While they can be effective in this role, a key limitation to their sustainability is the inability to recoup the costs of this advice. For sustainability to be assured, it is essential that a local remuneration system is in place and that the service providers are supported by back-up services that may be available once external funding is discontinued.

Commercial service providers: Private sector extension may be provided by entrepreneurs wishing to sell inputs, materials, machinery and equipment to farmers and other rural entrepreneurs as well as buyers ready to purchase produce from them. The nature of the advice provided is often linked to the products bought and sold. Extension is not a stand-alone activity but is provided as a service that

[4] Two World Bank-financed projects – Diversified Agricultural Support Services Project (DASP) in Uttar Pradesh and the National Agriculture Technology Project (NATP) – were specifically designed to decentralize extension, organize farmers and help FIGs develop high-value products.

complements the more tangible commercial services. In short, commercial businesses provide MOAS support services if this serves their economic interest. Advisory services are often deeply integrated into commercial aspects of the business. Outgrower schemes and contract farming are often seen as a popular and potentially effective way of delivering these services to farmers. Technical, business and marketing advice represent one aspect of the broad service support that farmers receive. The focus of advice is often placed on improving product quality to the benefit of the purchaser and as a way to promote partnership with suppliers.

Agro-industries and trading enterprises: Agroprocessing companies and export trading enterprises are also important sources of market extension. Advice is usually provided to promote a high-value processed or export product and is specific in its recommendations. The buyers are particularly concerned that produce is provided in a regular and consistent manner with the right quality and at the right time. As these services require a high degree of specialization they are also usually embedded in contractual arrangements and other business transactions. Sustainability of the relationship depends largely on the trust that is created between the two sides and this often requires giving up immediate benefits from side-selling for longer-term stable gains.

NGOs

The twin fears of market failure and government inefficiency have helped to catalyse the emergence of NGOs in the development arena. Provision of MOAS by NGOs has become one of the dominant modes of service delivery. This model has been embraced by both donors and governments. NGO-based projects often demonstrate a higher level of success than delivery through the public sector, largely because of their decentralized operations and commercial outlook. NGOs have acted as effective facilitators and have helped develop markets for MOAS especially where weaker markets existed. Whilst there are many MOAS that are not lucrative enough to attract private providers, NGOs have stepped in to fill the void. However, there are also drawbacks that will be discussed later.

Producer and commodity organizations

Producer and commodity organizations can be both the supplier of advisory services as well as the consumer of these services among their members. They are increasingly playing a significant role in MOAS particularly because there is recognition of extension advice being demand-responsive and producer organizations are closer to the source of member demands. Producer groups, however, can take numerous forms – varying in size, scale and composition. Typical groups and organizations include village-level SHGs, farmers' organizations, primary cooperatives, secondary and regional producer associations, processing and export organizations, commodity associations and national industry bodies. They have considerable potential to develop the skills of their members and leaders in value chain development while enhancing their financial and social security, managing their resources more effectively, coping with shocks and stresses and negotiating with local authorities, buyers, dealers and state institutions. While a main concern of these organizations is to enjoy economies of scale through bulk purchasing of inputs and materials and collective marketing of produce, in many cases they also provide expertise to their members, either through employed advisors or through linking with external advisory services.

Mixed public-private-civil society systems

Increasingly, new forms of agreements are being made that take advantage of the pluralistic nature of advisory services by promoting collaboration among public and private sector actors including civil society. This requires mechanisms established to facilitate coordination. A well-documented example of such collaboration has been the establishment of the Agricultural Technology Management Agency (ATMA) in Patna District of Bihar, India. ATMA played a central role in coordinating and mobilizing the expertise of other organizations, private sector firms, banks and NGOs to develop and test production technologies, to train farmers and arrange for the necessary inputs and so forth (Singh and Swanson 2000).

In some situations funding of advisory services may come from the public sector while delivery of services may be privatized. NGOs also play a role in developing value chains by brokering relationships among the different actors. Their role as an intermediary in this process is often very important in organizing farmers, assisting in negotiating contracts and developing trust between the two parties. In this way they can create new sets of relationships among stakeholders. There is, however, a delicate balance between intervening to make the system more effective and maintaining a less proactive role and largely fulfilling an essential facilitation function that is required for long-term sustainability and impact.

Scope of services

The most common MOAS reflected in the case studies include the provision of market and production information, technology transfer for high-value enterprises and postharvest handling. These forms of advice are mainly provided by the public sector extension services. The less conventional assistance often required in the form of legal advice and contracting is less forthcoming by all forms of service provision. Advice in marketing and farm business management is intermittently provided mainly by the private and NGO sectors. Of increasing importance is advice on food quality and safety which is often provided as a public good by extension or specialized service providers. Advisory services tend to be provided in combination with the commercial services of private sector service providers. A central role in addition to service provision is advocacy and lobbying. While financial services are widely demanded they are treated as a separate line of delivery through rural banks and microfinance institutions.

Economics, business management and marketing

The study has identified cases where the public sector extension service provides information on marketing and business (in India, Sri Lanka, Nepal and the Philippines). In these countries subject matter specialists are responsible for providing marketing and in some cases farm management services. In India the official responsibilities of marketing subject matter specialists is collecting agricultural commodity prices and quantities, analysing and disseminating marketing information and calculating the cost of production and productivity of various crops. In most cases, however, the subject matter specialists have limited skills in marketing and business and a weak knowledge base to provide the services required by farmers. MOAS is rarely included in extension programmes and little budgetary provision is given.

The private sector-led cases suggest that market information of a specialized nature is appreciated by commercially-minded farmers and is more likely to be purchased as a private good. Private companies regard information delivery as a business necessity in order to build a reliable supply base. In India, Pepsico, Mahindra Smriddhi, ITC, India Agribusiness Systems Pvt. Ltd. (IASL) and India Society of Agribusiness Professionals (ISAP) provide a wide variety of information services to their farmer clientele such as market prices, crop advisories, weather updates and other forms of agriculturally-related news.

Information delivery, India

Mahindra Smriddha, India: Mahindra & Mahindra is the largest tractor manufacturer in the world. In a bid to build its brand in the rural sector, Mahindra & Mahindra has turned all of its dealerships in India into farming advice centres. Known as Mahindra Samriddhi, they demonstrate and teach a farmer the best farming techniques, advise farmers on integrated plant nutrition and conduct laboratory tests.

India Agribusiness Systems Pvt. Ltd.: Established in 2000 as a private for-profit company, it specializes in providing information and knowledge – tailored to meet the specific needs of small and marginal farmers, commodity traders, government agencies and NGOs. It provides its specialized services through: (i) publications; (ii) online services; (iii) consulting; and (iv) media and video services. The company has cooperated with NGOs, kiosk owners and private sector organizations in order to expand the distribution network of its publications.

Staff assigned to NGOs and newly-established private sector MOAS providers lack practical experience in marketing and business management as well as the specialized expertise necessary to provide effective advice. The main role in MOAS support of some advisory service providers has been to provide farmers and other stakeholders with information on input and output prices, potential buyers, input dealers and key informants as well as advice and technical support on how to deal with them.

Weak markets for support services are a characteristic of remote rural areas. However, hidden from the view of the donor and the executing agency is a range of indigenous, small-scale, informal and embedded services, albeit often difficult to identify, access and understand. None of the case studies documented the availability of hidden services provided by the informal sector. This is an information gap and a useful reminder that service provision in weaker areas presents a complex challenge. Appropriate procedures are needed to identify informal service providers and to incorporate them into any developing MOAS service system. Acquiring information on this hidden sector is necessary to design service delivery mechanisms that incorporate traditional practices. The information is also essential to ensure that the design of new interventions does not damage already fragile market environments.

Quality and safety

Quality and safety of agricultural produce are becoming increasingly important for sales to modern retail outlets and for export. Both aspects of the production-marketing chain rely on the correct use of purchased inputs and the handling and transportation of produce to market outlets. Problems relating to quality and safety do not, however, stop at the farm. Poor packaging, transport, storage and other forms of market infrastructure together with regulation and legislation impact on quality and safety of agricultural produce.

There is increasing awareness among extension workers about safety, particularly with respect to the use and handling of pesticides. The evidence from Asia demonstrates that while extension services often have the technical competency to deal with production-related aspects of food safety, on farm, their lack of resources and budget in many countries makes them ineffective in reaching farmers and providing suitable advice. Moreover, as a host of other stakeholders is involved in moving produce to markets there are others besides extension workers – traders/inspectors etc. – who need to be mobilized to deal with the postproduction issues of food safety.

The situation with respect to quality is even more discouraging. Farmers selling to spot markets seem to be less concerned with quality as consumers are often reluctant to pay the higher prices of differentiated produce. In some situations there may be a perception of quality which in the case of fresh produce is largely related to physical appearance and there is pressure on farmers to produce, for example, blemish-free fruits and vegetables, which often require the use of large amounts of pesticides. Often the prices received for better quality produce cannot compensate the farmer for the

additional input costs involved. Farmers often have no incentive to improve quality beyond the minimum necessary to sell the produce. As a result, the demand for advice is low and often absent. This situation can be resolved by promoting fresh organic produce with lower costs of purchased inputs while promoting grading and sorting systems – and creating a premium price structure for quality produce.

Moreover, as quality and safety impact on all parts of the value chain from production to the consumer, advisory support cannot be left to the domain of public sector extension services. There are many other public sector departments involved and the private sector also has an important role to play. To ensure food safety, all countries have pesticide legislation and agencies responsible for registering and controlling the use of agrochemicals; functions that lie beyond the capacity and responsibility of the public sector extension service. It is vital that multiple agencies and the private sector are involved in ensuring food safety.

The case of India

In India marketing channels are often long and complex, prohibiting contact between the producers and buyers. Farmers who are aware about quality and safety aspects, especially about pesticide hazards, are complacent about the situation because there is no differentiated marketing channel for safe produce that can assure higher prices; there is no agency to propagate and ensure safety of produce and no mechanisms of certification; and there are no barriers to selling unsafe produce. There is also no system of sanctions to deter producers, commission agents or traders from handling unsafe fruit and vegetables in the market.

Dhankar (2006)

Similarly, in promoting quality, other value chain stakeholders need to be involved. Traders in particular have an important role to play as they are often involved in improving produce quality. However, they are also constrained by the purchasing power of consumers (Shepherd and Cadhilon 2008). Traders are further constrained by poor market infrastructure, poor storage facilities, an inability to control the quality of transport and handling, and a lack of knowledge of postharvest techniques. Notwithstanding these challenges, some traditional traders have been seen to improve quality particularly in the fruit and vegetable supply chain. In Viet Nam, for example, some traders focus on quality issues, providing investment, and even training support (FAO 2005).

Some movement has been made in Asian countries towards promoting „safe' fresh produce. China, Thailand and Viet Nam have introduced programmes to promote safe vegetable production but progress has reportedly been fairly slow and most produce sold still fails to meet minimum standards. While food quality and safety issues for fresh produce require knowledge of Good Agricultural Practices (GAP), adoption at the farm level has been limited. In India and other South Asian countries it is common to find GAP popularized at the university level but its institutionalized messages have not as yet permeated the extension services. Private sector-led contract farming schemes are more likely to promote GAP and other certification measures particularly when exports are concerned. There are good examples of this from Thailand, Malaysia and Viet Nam.

In most countries in the region enforcement is the major constraint. Controls, however, appear to be largely ineffective due to poor coordination among the agencies involved in food safety and quality and those charged with controlling pesticide use and other aspects of production. These institutional weaknesses combined with a lack of resources makes compliance of the laws and regulations next to impossible.

More effort is needed by both public and private sector advisory services to address these constraints. This will require, however, not only a refocus of public extension services but the establishment of market infrastructure – construction of cold chains, storage facilities, collection centres and crop-specific research and development for market-driven production. Market-led extension programmes are also needed in conjunction with IT-based marketing information. Farmers also need to be better

educated on quality and safety of produce both for domestic and export trade. The focus of extension should be placed not only on the farmer but also the trader, i.e. the purchaser, financier and adviser over the production and marketing process. It is in fact the trader who is the main promoter of quality and safety. This may also require appreciation of the role of traders' associations where they exist. More support will be required to develop their capacity and provide financial assistance in setting up mechanisms to supervise, check and certify the quality and safety of fresh produce.

Insurance

As noted earlier, the changes in farming as a result of globalization, market liberalization and climate change bring risks as well as opportunities. With vagaries in production as a result of climate change, smallholder farmers are more frequently experiencing difficulties in providing regular supplies of raw materials and in sufficient volume to allow them to meet buyer requirements. Climate change is impacting both on crop productivity and regularity of supplies. The challenges also impact on other value chain stakeholders. Small-scale processors, for example, have to increasingly compete with larger-scale food manufacturers that can benefit from economies of scale in processing technologies; there is a threat to traders in local markets of being squeezed by the growing importance of specialized procurement practices and certified products. Above all, small-scale producers and processors do not always reap the benefits of new market opportunities; they face substantial obstacles in meeting market demands for quality, quantity and timeliness.

Market-related risks discourage investment, specialization, commercialization and even innovation as a whole. However, while market orientation inevitably involves exposure to new risks, the traditional subsistence systems are also becoming more precarious, as are the overall livelihoods of the rural poor. Risk reduction measures need to be taken by government and service providers in order to ensure that the environment is conducive to encouraging MOAS. Addressing risk is perhaps one of the greatest challenges in ensuring greater market access for smallholder farmers. High quality advisory services can provide smallholders and the more marginal farmers with the knowledge and information they need to reduce the risks of increased exposure to market factors and to make informed decisions about what risks they wish to take.

While risk mitigation measures are required, public and private extension services have paid marginal attention as to how they can assist. A recognized aspect of this is the importance of building strong links to advisory services to ensure that farmers have access to information on, for example drought-resistant varieties. While risk reduction strategies in the region are few and far between, China and India have introduced public sector-run insurance schemes to mitigate the risks related to droughts and floods. MOAS can play an important role in providing information about and facilitating access to risk reduction measures offered by other types of services.

Agricultural insurance pilot programme – China

Since 2007, China has developed an agricultural insurance pilot programme involving the Ministry of Agriculture, local government, NGOs and private sector insurance companies. The programme is heavily subsidized by the government ensuring that the premium is low and affordable to small farmers. The government has also developed a number of training programmes for extension staff in order to raise awareness among farmers. Public sector actions include: disseminating knowledge of the programme, policies and operational procedures, assisting the private sector in collecting premiums from farmers, evaluating agricultural losses as part of the claims process, supervising the operations of private sector companies and conducting research. The government also provides subsidies to the private sector to cover part of the administrative costs of business operations. The programme covers a range of MOAS services – marketing, claims management and extension – provided for all categories of farmers by the public, private and NGO advisory service bodies. The advisory services for each category of service provider are identified below:

Advisory services	Public sector extension service	Private sector	NGO/CSO
Dissemination	Government policy, such as explaining the rules of the insurance premium subsidy	Operational aspects of agricultural insurance	Awareness raising and advocacy
Marketing	Local government helps to collect premiums and work as a 'broker' to communicate between farmers and insurance companies	Specific business operation	
Claims monitoring	Local agricultural bureaus work as claims teams. An agronomist and a livestock specialist are responsible for assessing the insured loss	Claim team members assess the insured loss	Claim team members assess the insured loss
Advisory	Address enquiries about crop insurance policy	Address enquiries on specific insurance policies	

The pilot programme has been effective in creating awareness among many farmers in China about the scheme and to date some 88 million farmers have purchased agricultural insurance. The ability of the Chinese farmers to manage agricultural risk has clearly improved.

The scheme has the potential to link up to financial services. Traditionally finance institutions have not been found in rural areas of China but the government has in recent years been promoting rural microfinance institutions and this has allowed synergetic linkages between agricultural insurance services and financial services providing potential benefits for both.

Zhang Qiao, insurance expert, personal communication

Institutional support and development

In the changed agricultural environment small farmers often need to cooperate with one another to obtain reliable and economical supplies of raw materials so they can market their produce. They cannot easily accomplish this on their own, but any form of cooperation requires initiative from an experienced individual who has the time and ability to organize it. If none of the farmers has the time

or ability to do this, some extension support may be needed to organize a cooperative effort. Only in this way can small farmers compete for sources of supply and for markets.

Organizational development of small farmers into producer groups is a common area of support often facilitated by NGOs and sometimes by extension workers. However, it is usually seen as a one-time activity with little continued mentoring and coaching – which is essential to strengthen the group, forge linkages and the establishment of apex or secondary organizations. While the literature often calls for encouraging spontaneous „bottom-up' development – initiated by the farmers themselves – in reality organizational development requires external and often specialized support.

While the emphasis has been placed on producer groups, increasingly capacity building is becoming more intricate and involved. Strengthening value chains calls for the establishment of platforms for the participation of multiple stakeholders. Extension workers sometimes fill this gap by convening multistakeholder forums to understand market trends and drivers, to foster better mutual understanding and trust, to identify bottlenecks along value chains and devise solutions, and to assist traders and processors to link up with reliable producers.

Additionally this also calls for the organization of farmers into secondary organizations, clusters, networks and linkages among different value chain actors by providing support in financial management, leadership, negotiation skills and innovation development. Farmers in groups are increasingly working with others to gain advantages not available to individuals. Networking is necessary for both vertical and horizontal expansion and has the potential to leverage additional resources and increase the efficiency of business operations.

Value chain coordination

Value chain coordination is a service that is not usually provided by public sector extension services. This ostensibly involves negotiation of contracts and linking producers to agribusiness companies and supermarket retailers. It also involves the provision of advice on certification and accreditation. Contractual agreements can take both formal and informal forms. Formal contracts often guarantee prices for produce sold and set quality and quantity standards for producers. Formal contractual arrangements are more commonly found in the emerging countries of Southeast Asia – Thailand, Malaysia, Viet Nam and Indonesia.

There is no evidence that formal contractual agreements have been necessary to ensure sound linkages between farmers and buyers. Weak contract enforcement and an inefficient jurisdiction system have made contractual agreements obsolete in many countries in the region. Mutual trust was recognized as more important and was perceived to be developed through longer-term „fair play' by both parties. Trust could be built by ensuring prompt and reliable product delivery together with reliable and fast payment for produce sold. However, a sound understanding of quality requirements and methods of quality control are essential prerequisites for effective advisory support. It has been observed that the more formal contracts were drawn up by buyers in negotiation with individual producers or groups of farmers.

Although contractual support is becoming more recognized among advisory service providers, formal contracts are mainly in the domain of the private sector. Public sector extension workers, in contrast, tend to be more engaged in facilitating informal „trust-based' linkages between farmers and buyers. Informal arrangements are also common among farmers selling produce with less stringent quality requirements. In some cases NGOs play a facilitating intermediary role but the case studies suggest that they often lack the knowledge and competency to effectively resolve conflicts and arbitrate on behalf of farmers when disputes arise. The role of NGOs in strengthening value chains is contentious. Many NGOs are known to unduly offer subsidies in the form of concessionary loans and free or low-cost inputs, which could create unfair competition and unsustainable livelihoods.

Combined commercial and advisory services

There appear to be many more cases of service providers – public, private and NGO – delivering advisory services to farmers in combination with commercial services. Advisory services *per se* are often inadequate to foster market-oriented farming. Commercialization of farming requires the availability of good planting material, an assured market, existence of market infrastructure and a diversity of support services that often include the commercial sale of produce. A case in point is the ATMA model in India which required a market assessment, organizing farmers into producer groups, developing high-quality planting material, postharvest handling, processing the raw material into a value-added product and selling it in the market. This suggests a need to provide commercial services combined with extension support, institution building and marketing. The sales of inputs and final produce often lie at the heart of private sector service provision.

Other examples similarly suggest that independent stand-alone MOAS providers solely offering extension advice are likely to be less effective than those providing a package of services, particularly through „interlocking-market' linked service models. The private sector-led case studies highlight situations where contract farming and agribusiness linkages are established. In most cases it is the private sector (commercial bodies) that initiates the linkage and provides a broad range of commercial services to outgrowers (input supplies, technology and finance). In some cases, formal contracts are drawn up. However, the existence of contracts does not automatically guarantee the development of successful linkages and, as noted earlier, informal trust relationships are often more important. When farmers are well informed and have other choices, and service suppliers or traders are competing to purchase outputs, then the interlocking markets are more likely to benefit them.

Advisory and financial services

Some of the cases documented in this publication suggest that many market opportunities may not be adequately exploited without access to finance. There are often strong synergies between finance and business services. In the Sri Lankan Export Production Village project implemented in the 1980s, credit was seen as a necessary part of the package of assistance required for producers to move into new areas of activity. The commercial banks in Sri Lanka initiated a combined programme providing „bundles' of financial and non-financial services to support farm development. Financial and non-financial support was provided through a private bank – Hatton National. In this programme, the linkage between MOAS and rural finance was necessary for cost recovery. The fee for services was not paid directly and the service charge for technical advice was included in the loan payments.

However, there has been a trend over the last decade to decouple advisory services from rural finance in order to create a simple, direct and effective relationship with clients. The limited capacity of service providers, and their frequent inability to deliver a broad range of services effectively, was the basis for this thrust. Nevertheless, there is strong evidence to counter this approach. Some cases show that enterprise development is likely to be more effective when finance and business management services especially are delivered together. While rural finance is necessary to stimulate enterprise development, management advice and market information are also needed to ensure success. Moreover, in many rural markets, business and financial services providers are often the same (intermediaries/traders/input dealers). Even in the case of modern contract farming, financial services are often provided through the commercial venture. From the viewpoint of cost recovery through embedded services, the two types of service should not be separated.

In some cases, business management training has been the catalyst to create the demand for finance. Producers, after undergoing training, may become interested in expanding their business opportunities. Programmes that combine business services with financial services have been observed to be more successful particularly among business enterprises located in the peri-urban belt with better access to markets. In general, there is a demand by farmers for „bundles' of services, and initiatives that provide

this support stand a better chance of creating successful and sustainable business operations. The challenge is to relink the provision of MOAS with rural finance in a way that the advantages of specialization can be assured.

Information services

ICT has an important role to play in informing farmers and rural entrepreneurs on business management and marketing issues. Information on agricultural production, inputs suppliers, dealers, market prices and buyers is increasingly being demanded by farmers and rural entrepreneurs. Of particular relevance is the mobile phone, ownership of which has been rapidly expanding in rural Asia. Its growth has great potential for the widespread dissemination of production, marketing and management information. Mobile phones are particularly relevant in rural areas and where the rural population may be illiterate. However, many forms of information and market price data in particular may only be available as SMS text messages, which is a constraint for people with lower levels of literacy and who speak minority languages.

In India, Nepal and Bhutan publicly-funded rural kiosks have been widely established as community-managed information hubs with access to the Internet as well as mobile phone information. Juxtaposing this are the tremendous steps made by the private sector. In India the private sector has started opening variants of information centres in order to strengthen their supply chains. ITC's *e-Choupal*, Pepsico's scheme in Punjab Province of India, DCM's *Harilayi*, Godrej's *Aadhar* and Mahindra's *Subh Labh* are some of the many initiatives that are currently being developed. Many of them are ICT-based but include not only Internet access but the production and publishing of technical information and the provision of individual and group advisory services. The Indian Society for Agribusiness Professionals (ISAP), for example, provides both market and specific technical information through its farm publications. Similarly, Indian Agribusiness Systems Pvt. Ltd (ISAL) has also been able to establish its credibility as a neutral, relevant and accurate information provider and many farmers are directly buying its publications. The field evidence suggests that market information of a specialized nature is appreciated by commercially-minded farmers and is more likely to be purchased as a private good. Some examples can also be found of collaboration between financial service providers and information hubs, providing farmers and rural entrepreneurs with a fully-integrated support service package. These private sector-led initiatives have a wide appeal and outreach; reaching thousands of customers within a country.

ICT has great potential to increase the outreach and impact of extension services and to distribute information to multiple stakeholders in the agriculture sector. In particular it can greatly improve access to information urgently needed by all stakeholders in product value chains. But while market information is widely provided through mobile phones in the form of market price information there is considerable potential to broaden the service and provide more comprehensive market intelligence that includes trend analysis, identification of key players, provision of trade information and so forth. Moreover, market information services need to be tailored to specific target groups and this is an area that is inadequately addressed. But access to ICT only gives significant advantage to rural businesses if farmers, entrepreneurs and extension workers possess the skills to use it effectively. Finally, the potential of ICT in MOAS is great, but it needs to be harnessed in the most appropriate manner. It needs to be used to better march clients' needs and to do this effectively it should be considered in the wider spectrum of MOAS with service providers fully integrated into this role. While rapid changes are taking place in hardware technology more work is needed to match the information sources to the demands of clients.

Cost recovery

The development and sustainability of MOAS rests foremost on financial viability and the availability of finances to maintain the system. This has been the bane of public sector investment in extension and the most critical factor limiting the expansion of the private sector delivery. But farmers are reluctant to pay directly for MOAS, particularly those services that are purely advisory. While public sector

extension has difficulty charging directly for advisory services they have introduced a number of cost recovery mechanisms such as levies and revenue-generating activities. The private sector, however, has fared much better by embedding the cost of MOAS in commercial transactions. In some cases the public sector has contracted private sector operatives to provide these services. The principle discussed previously of public and private goods holds true from case study experience. Farmers are willing to pay for advisory services as long as they recognize financial benefits and profits from the services paid for.

Each of these financial modalities is elaborated below.

Levies: Public sector extension services have in some cases introduced commodity-specific levies to finance MOAS. This mechanism has potential where the marketing system is sufficiently concentrated to permit ready collection of taxes. However, levies have only been seen to work effectively for value added products – agroprocessed and export products.

Revenue-generating activities: Revenue-generating activities are largely promoted by public sector extension services. Examples of such activities include the commercial farming of surplus land owned by the state or its sale or leasing. Other forms of revenue generation emanate from sale of non land assets, other services (laboratory services, certification and consultancy) and goods (sales of publications). Although practised in some countries in the region, it is rare that these activities provide more than a fraction of total resource requirements, although there are exceptions. The Chinese Government, for example, tested several approaches to cost recovery. One way that has proved effective was to recover extension costs by setting up commercial agricultural stores for input distribution. The stores are closely linked to agrotechnical extension offices at county and township levels, which provide farmers with one-on-one extension advice on the selection and use of agricultural inputs if they purchased them through the store (Nie *et al.* 2002). Under this model, most of the cost of extension services is recovered from the sale of production inputs and as a result some of the township offices have increased the number of extension staff employed.

Contracting extension to the private sector: Another option for alleviating financial constraints is to contract extension agents to private sector organizations. The examples in Asia are limited although mechanisms are being tested and tried in Latin America and Africa. These schemes involve a government agency grading and certifying agricultural consultancy firms and advisory services are awarded to competitive bidders. Often the cost of the service is shared between the government and clients in varying proportions. If clients are dissatisfied with the service received, the consultants can be replaced. These initiatives can potentially harness private sector resources as well as exchange information and knowledge between the public and private sectors.

Embedded services: As noted before, embedding services is a common private sector strategy to generate income. This can be done in a number of ways:

- Generating income from a viable service to cover the costs of non-viable services, i.e. cross-subsidizing with income generated from more profitable services. The advantage of this is that a service provider can remain sustainable even if individual services are not.
- Facilitating business links between farmers' input and output marketing businesses. As noted before, the cost of advisory services is covered by the price mark ups charged for sales. Service providers that supply inputs or technology provide training or advice as part of the sale. Some enterprises also have buy-back arrangements of final products that permit them to recover the costs of MOAS through sales. Agribusiness firms often provide inputs, technology and supervise production while farmers are obliged to sell produce of a specified quality to the agribusiness firm.

- Facilitating business links between the farmers and rural finance. In this case the costs of management services are embedded in the conditions of loan repayment (piggy backing off microfinance). [5]
- MOAS providers could overcome the „ability to pay' problems by selling a mix of products and services to farmers of different size. Some services may hold greater potential to be financially viable. The revenues earned can be used to finance complementary services which are less viable but are believed to have a positive impact on the farm business or on the market as a whole.
- MOAS should be provided to a broad range of clients including small- and medium-scale commercial farmers, rural entrepreneurs as well as smaller farmers with fragmented holdings. This model encourages cross-subsidization between better-off clients and the more vulnerable.

Extension contract systems: MOAS services together with inputs may be provided to both individual farmers or groups. Input costs are recovered after the harvest and payment is made by the farmer or farmers according to a formula that sets a minimum target and a scale of payment on revenue levels that exceed the threshold. If the volume or value of sales fall below the agreed target as a result of poor advice, the compensation can be proportionately reduced.

Village extension contract system: An agricultural advisory committee consisting of representatives of farmers at the village level could hire out MOAS services. The MOAS provider would work for the village as mutually agreed upon with the committee. The committee collects money from villagers based on criteria such as area/crop and ultimately pays for the MOAS services.

Service for vouchers: Farmers are not provided with public extension service, but are given vouchers depending upon the size of land, type of enterprise and type of information needed for certain years. Farmers can use these services trading the vouchers to any MOAS provider, whether public or private, but after a period of time they are expected to pay for the services fully, as and when they receive them. The vouchers would then be transferred to other farmers, i.e. the next priority group. Thus gradually over time a demand for MOAS is created and public extension can be gradually withdrawn.

The case study evidence is diverse and includes projects that have been heavily subsidized and others with varying degrees of cost recovery. However, direct payments for MOAS by small farmers and microentrepreneurs were not seen to be an established practice. Private sector MOAS providers were more successful in recovering at least part of their costs when providing specialized services to support high-value products. These tended to be directed towards organized producer groups and more entrepreneurial farmers and businesses in the value chain.

There is also evidence of informal forms of payment, often through voluntary collective action to pay for the extension advice offered. For example, women's SHGs, farmers' associations and cooperatives organize and pay for extension services for their members out of subscriptions and membership fees. In some cases in-kind contributions in the form of materials, land, labour, housing and transport may also be used where cash is limited and credit is constrained. These contributions have been provided to inadequately paid public extension agents as a means of ensuring access to a service that would otherwise be denied to users, demonstrating both the private good characteristics of the extension advice and its amenability to collective action to internalize externalities and reap economies of scale.

Marketing services, technology services and other tangible services have tended to be in greater demand amongst clients willing to pay. At the other end of the spectrum, individualized advisory services in business management and training seem to be the least likely to recover costs. The added

[5] Programmes that provide credit with advisory services have tended to be expensive (operating costs equal 40 percent of the loan portfolio) but are also characterized by uncertain impact (the rate of survival of the financed operations is unknown) and weak sustainability (low repayment rates).

value from tangible services is direct and more obvious. But in some cases members of producer groups created a demand for services and even paid for support in group organization.

Finally, it should be pointed out that the cost recovery of a single service may not increase linearly, as is commonly expected. The level of cost recovery could fluctuate considerably. A service provider operating in a new market may find that the level of cost recovery declines as new entrants come into the market, creating competition.

The dynamics of cost recovery

Greater understanding is needed of the dynamics of change among private sector MOAS providers and its impact on cost recovery. The evidence suggests that private sector delivery of advisory services is evolutionary. Initially MOAS providers may need to receive subsidies from the state to set up business. This has potential to develop into a process of direct charging for services provided which could include the provision of combinations of both advisory and commercial services. In this situation the services become embedded and the service provider plays the role of a commission agent; collecting and marketing produce. A better understanding of the dynamics of cost recovery is required so that MOAS providers know when an individual business is likely to be financially independent and with what kind of package of support.

In some of the cases studied, an incremental approach to cost recovery measures was adopted. Farmers needed time to adjust to paying for services that were previously provided as a free good. In other cases, particularly with respect to management training, a demand for the service needed to be created before farmers were ready to pay for it. While farmers may feel that they need a service or even use a service, if it is provided free of charge, this does not represent an effective demand for that service. In some projects and private sector initiatives farmers even reduced their use of MOAS when charges were first made, although later, as they recognized the value of the service, demand increased. In all cases however, farmers did not pay for full recovery of cost, except in the case of the embedded services included in contract farming ventures.

For example, in Bangladesh in the Leaf and SAAKTI projects, local service providers realized that generating income from selling advisory services had its limitations. This was particularly true for local service providers specializing in specific crops who could not sell their services throughout the year. On the other hand, some producers argued that *we do not have the time to go out and look for good-quality inputs. We would have to travel far and we do not know where to go.* In this context and in order to meet producers' demands, some local service providers adopted an embedded service strategy for cost recovery.

The findings suggest that poor producers generally prefer embedded services as they include the provision of inputs with immediate advice. The fact that local service providers can purchase inputs in bulk enables them to reduce per unit input and transportation costs at the farm level. This encourages farmers to pay for these services. This is a win-win situation where producers reduce their production costs, input sellers increase their market share and service providers make more profit by selling inputs. The willingness of producers to pay for services significantly contributes to a change of spirit among local service providers, making them more professional. These schemes, however, require that the following prerequisites are in place: (i) that MOAS is of good quality and meets farmers' expectations in terms of content, delivery method and language; (ii) MOAS should be available at the community level and as such be supplied by local service providers who live in the community and are easily reachable; and (iii) the system must be affordable and competitive. The local service providers, in turn, have to be reliable and accepted by the community, possess facilitation skills for the successful transfer of information, have linkages with innovation centres and resource organizations and possess knowledge of quality input suppliers and output buyers.

Capacity development of women's SHGs, India

Extension and training support were provided to women's SHGs in a phased way. The project and activities were funded by the Indian Council of Agricultural Research (ICAR) and implemented by the Central Institute of Post-Harvest Engineering and Technology (CIPHET) which provided a range of MOAS and commercial support services. Agricultural advisory services were provided free of cost. Management advice and training were offered for the leaders of women's SHGs in a range of value-adding technical programmes. The intention was to empower the women's groups both socially and economically. A second stage was to develop a cadre of local service providers – that had previously been trained by the programme – to replicate the training received among SHG members and to charge for advice given. Service providers charged Rs.300/month/member (approximately US$7.00). However, other services like information related to market, inputs etc. were free of cost.

In the projects aimed at developing local service providers it was noted that most service providers tend to work, in the initial stages, on a voluntary basis by providing services to relatives or neighbours as part of their social responsibility. This is practised informally in the community and without a clear strategy and organization. Often these service providers are reluctant to charge service fees as they feel that they would not be accepted by the community. However, once trust is developed together with an awareness of the services on offer, local service providers become more assured in charging for their services on a fee-first basis in either cash or kind. Once the role of local service providers has been acknowledged by clients, the demand for their services in other sectors can also increase. As a result many local service providers diversify the range of services on offer and support a diversified range of subsectors. Specialized technical services are also sometimes introduced for high-value/niche products such as medicinal plants and fisheries. These are often related to marketing; identifying market opportunities, promoting linkages with market actors and developing new products through processing and design.

3. DISCUSSION ISSUES

What should be the role of the public sector in providing MOAS?

The role of the public sector is multifunctional – to create a conducive environment for private sector development, provide public goods for citizens and correct and compensate for market failures. National governments have much of the responsibility for creating an enabling environment for MOAS by constituting laws and procedures for business development, setting an effective regulatory framework and providing support for public sector activities such as agricultural research and extension. It is now well understood in many countries in the region that the government should not be involved directly in agricultural production and marketing. Rather support is needed in rural infrastructure development (construction and maintenance of roads, communications and irrigation), stabilizing the macroeconomy (managing the exchange rate and maintaining fiscal discipline and low inflation), enforcing contracts and negotiating trade conditions with commercial partners (tariffs, biosafety standards, etc.) – key areas of public sector intervention. The state no longer seems to be directly involved in „transforming' the sector, or indeed the whole economy, as was previously expected, but rather with „regulation' and „facilitation'.

The public sector also has a role in building the credibility of national institutions and in particular research and education. It is vital that research institutions have the capacity to conduct cutting-edge, relevant and timely research and to provide opportunities for the private sector to invest in new technologies and innovations. Additionally, the government has a responsibility to ensure that the infrastructure is in place to promote private sector investments, particularly in agribusiness. As part of collaboration with the private sector, governments can also play a role in improving the fairness of industry standards and requirements by encouraging the private sector to establish its own self-regulation mechanisms; product certification (e.g. organic, fair trade, good agricultural practices, etc.); ethical trade norms; and to promote corporate social responsibility. The public sector also has a responsibility to support the provision of advisory services that generate benefits for society as a whole. As we have seen previously, small farmers and microenterprises are often unlikely or unable to cover the costs of advisory services by themselves. „Externalities' in the form of productivity spillovers, environmental impacts and poverty reduction, associated with extension and information services need to be met and this is only likely to occur through public sector support. However, the public sector also has a role to foster private sector investment by encouraging the development of farm and off-farm businesses as well as private service providers.

How can the public sector be revitalized?

Where markets are weak and poverty and food insecurity concerns predominate, public sector extension may be the only recourse. Even in the more advanced countries of Asia public extension continues to be important. Some MOAS constitute common goods that are relevant for society at large. Although, as we have previously seen, there is no clear demarcation between the different service categories, it is clear that a number of core functions remain in the domain of the public sector. However, given the problems of capacity and accountability discussed earlier, public sector revitalization must be accompanied by a reorientation of public MOAS providers to the needs of farmers and other private sector stakeholders in diversifying and commercializing their production. Where the private sector is reluctant to invest, the challenge lies in strengthening the existing public extension services. As noted previously, many governments have started to embark on processes of decentralization and on ways to broaden the range of advisory services on offer to farmers, while at the same time ensuring that services are organized to better respond to client demands. Greater cost effectiveness through a more efficient allocation of resources can be achieved if considerations are introduced to secure greater extension outputs at lower cost.

The public extension services of India, Bhutan, Sri Lanka, Nepal, China and the Philippines have experienced some shift in the type of extension services offered, providing technical information to farmers to increase profitability and gain access to more reliable markets. It was the demand from farmers that took the lead in reorienting extension although considerably more work is needed. The case studies suggest that public sector programmes need to reinvigorate themselves in order to respond to global changes and ensure that small farmers continue to be supported while encouraging private sector activity at local and central levels. Another example is the case of Sri Lanka, where the Department of Agriculture established the Agricultural Enterprise Development and Information Service to promote agro-enterprise development and farming as a business.

Agro-enterprise development in Sri Lanka

In 1997 the Agricultural Enterprise Development and Information Service was established at the central level to promote agro-enterprise development. Since 2006, the unit has been decentralized to the interprovincial level and six Agricultural Enterprise Development and Market Promotion Units have also been set up. The mandate of the unit is to promote commercial farming of food crops – rice, field crops, fruit and vegetables. The agricultural enterprise development service, although mandated over a decade ago, has been limited in its outreach to smallholder farmers and affected by the general malaise of a fragmented extension system in the country. Staff members of the Agricultural Enterprise Unit, however, have limited marketing and farm business management skills and inadequate knowledge and information on market-oriented agriculture. Frontline extension workers responsible for field activities have received little training in marketing and enterprise development. Similar situations occur among headquarters-, provincial- and district-level subject matter specialists. There has also been limited recruitment of specialist staff in agribusiness or farm business management and marketing – core subjects to promote smallholder commercialization. Little attention has been given to providing field staff and subject matter specialists and through them farmers with the skills required select profitable enterprises and prepare market-oriented business plans. This example suggests that even when enterprise development and commercial farming are promoted by the public sector capacity limitations in finding appropriately qualified staff with the correct skills prevail. While the government has already recognized the importance of commercial farming by setting up these decentralized structures, more effort is needed to strengthen the units and ensure that they function effectively.

How effective has the private sector been in MOAS?

The performance of the private sector in providing advisory services has not always fared better than that of the public sector and there is little evidence to show that small farmers and entrepreneurs demanding MOAS are better served. For some companies specializing in the provision of MOAS there are also considerable risks involved in investing in a business aimed at providing business services. The start-up costs of setting up the business are high and government support is often absent or weak. The risks reduce the expected profitability of the enterprise and increase the possibility of failure.

The private sector has also, in many countries, been weak in penetrating into the rural areas and particularly those areas that are more remote, road infrastructure is poor and delivery of services expensive. Private sector service providers tend to be located in more accessible areas closer to urban demand. Private advisory services have tended to be fragmented and this has led to inefficiencies in service delivery. Farmers often also lack awareness of the services on offer and as such the demand for these services tends to be low. Smallholder farmers are also reluctant or unable to pay for the services received directly and when payment is made by embedding advisory services in commercial transactions, there is considerable mistrust. Some farmers side-sell and endanger the long-term relationship between supplier and buyer. There are many situations where the atmosphere of trust and transparency among farmers as suppliers of produce and buyers breaks down.

Private sector service providers also face capacity development problems similar to those found in public sector agencies. Often they lack specialized technical support and specialists to deal with postharvest handling, quality and safety and farm and agribusiness management and are reluctant to

invest in developing the capacity of their staff. In some cases, they may view training as risky, opening opportunities for their staff members to find employment elsewhere leading to the risk of an internal „brain drain'. Local service providers also tend to be weak, lacking confidence in selling their services and negotiating terms and conditions, due to a lack of business orientation. These weaknesses inhibit the quality of the training programmes delivered by the local service providers as well as the potential for expanding the business as an MOAS provider. More definitely needs to be done to address these capacity constraints with the public sector playing a predominant role in developing training programmes for private sector entrepreneurs.

How effective have NGOs been in providing MOAS?

NGOs, as part of civil society, are vital in strengthening public sector governance and especially providing political voice to the most vulnerable levels of society. They also play a vital „watchdog' role, monitoring agricultural policy-making processes, influencing budgeting and holding policy-makers and public administrators accountable. In addition to these widely accepted roles they are becoming involved in MOAS. They are increasingly involved in organizing farmers into groups and some NGOs have gone further by establishing farmer-led business organizations and facilitating linkages to markets and finance.

Their success in promoting commercialization has, however, been mixed. While they have taken on a useful role, in the absence of public and/or private service providers, to provide extension support they have also in some cases gone further still by selling produce on behalf of farmer groups. Although they can demonstrate considerable success by responding to client demands, they often fall short especially with respect to MOAS. As their agenda has traditionally focused on social welfare, some NGOs have had difficulty combining this with a business-like organizational culture. NGOs are, moreover, often dependent on donor funding for their operations and, in spite of claims of sustainability, they may not be in the position to continue delivering MOAS after donor withdrawal. But of greater concern is the role that some NGOs play by delivering commercial services directly. In some cases they provide services directly to farmers by providing transport to move farm produce to markets, distribute inputs and supply credit. Some of these services are also offered at reduced market rates or even for free and this is risky and unsustainable as it undermines existing commercial services and crowds out the private sector. It may even result in farmers being worse off than before. It is not easy for NGOs to shift from providing subsidies to becoming commercially viable service providers. Similarly the recipients get used to the subsidized assistance and are reluctant to take on the full responsibilities of running their enterprises as businesses.

A problem of this nature was experienced by a United States Agency for International Development (USAID) coffee-development project in Viet Nam which supported the formation of a farmer federation. The federation was initially established through subsidies provided by the project. As the federation expanded it faced confusion between its developmental objective and the need for its role as a going concern. In addition, the non-commercial pricing structure established did not encourage quality control or efficient cost management. Farmers had difficulty perceiving the link between coffee quality and financial reward. The NGOs, in this case, were largely dependent on donor funding for their operations and in spite of claims of sustainability, were not able to continue delivering business services after donor withdrawal. In principle, direct delivery by NGOs also hampers the growth of commercial providers and limits the expansion of service provision.

NGOs have also been used to develop the capacity and skills of local private sector service providers. But NGOs themselves are often weak, requiring capacity-building efforts. In fact, the failure of the private sector to provide quality services is often traced back to the capacity-building weaknesses of the NGOs responsible for training the local service providers. These failings can be found in all functions related to value chain development: coordinating planning, facilitating market linkages, developing communication skills and designing/organizing training. These tasks cannot be done effectively unless NGOs (international and local) have qualified staff to do this work. MOAS requires sets of skills that NGO staff may not have needed in the past and the transition to a greater market

orientation cannot be achieved without developing them. In short NGOS – both international and national – need to develop staff training, particularly in enterprise development and marketing.

How can private service markets be strengthened?

A condition for private service markets to operate is that there is sufficient volume of demand and clients have the purchasing power to pay for services provided. In order for this to occur private sector service providers need to be integrated into the market so that they receive an adequate revenue flow. While public agencies may be keen to promote private service providers, in practice they run the risk of distorting markets by providing the „selected few' with financial support and in this way crowding out indigenous private companies. Since service providers depend on successful survival in the market, the support measures should be directed at all private providers in an effort to avoid market distortion and encourage competition by attracting more of them into the sector.

The public sector has responsibility to demonstrate to potential private businesses the benefits that can accrue to them. A starting point from the demand side is to undertake a thorough appraisal of the market potential. This includes an assessment of the demand for the services provided and an assessment of the range of service providers available, the quality of the services offered and the willingness of consumers to pay. These efforts lay the ground for expanding service demand and introducing and testing new services. A range of market interventions can be used to develop the market for MOAS that includes:

- Using information from up-front qualitative market assessment to identify service providers.
- Conducting diagnostic surveys of enterprises, selecting businesses and approaching them with specific offers to help them improve their performance.
- Using formal education to stimulate awareness and understanding of the need for MOAS.
- Promotional opportunities – for example for matching grants for technical assistance to lead firms, or for business opportunities for support service providers – in local media such as local radio, or via direct promotion in pilot local market places.
- Building up local capacity to understand the market and possess the skills to respond to market changes.
- Using existing individual and professional networks of partners, such as NGOs, producer associations and cooperatives and chambers of commerce.
- Developing local radio and other forms of mass media communication.
- Using both modern and traditional institutions to reach target populations.

Some market issues can often be addressed from more than one angle. Promoting the establishment of producer organizations addresses both the demand and supply side of MOAS. When small farmers are targeted as clients, the formation of producer organizations and associations tends to lower the barriers for access to services for clients. This is a common way to foster private services as the costs are shared among member clients. Supporting and facilitating the development of a service function for members implies organizational development of groups and, at the secondary level, associations to provide services effectively and efficiently. In order to foster market development, the public sector should encourage private sector service providers to collaborate with them in facilitating the organization of farmers into groups rather than to compete with the private sector in service provision.

How can the public sector better collaborate with the private sector?

Collaboration with the private sector is critical to develop a pluralistic MOAS system that has potential to result in balanced and inclusive development. Moreover, by promoting private sector investment, authorities can potentially reduce public sector spending quite substantially. Interventions, however, require clarity on the role of the public sector, the services that should be provided and the most effective ways to develop private service providers. As seen previously, the public sector has responsibility for providing public goods and services and creating the conditions for successful

private sector entry. While public sector assistance should be market driven and supportive of creating a conducive business environment, the public sector also needs to be responsive to the demands of value chain stakeholder in providing public goods. This can sometimes be done by outsourcing public service provision, developing competitive funding mechanisms and introducing transparent tendering practices while concurrently upgrading the capacity of the public extension service in core public functions.

Private sector involvement in collaborative endeavours with the public sector is, however, often limited by the risks they have to bear in investing in business enterprises and providing MOAS. Commercial private companies often distrust the public sector and are reluctant to work with smallholders because of the high risks involved. A close public-private sector relationship, drawing on all the actors involved in service provision, is needed to spread the risks between the government and the private sector. Risk-sharing benefits need to be designed to reduce those risks that restrain the private sector from entering new and untested markets, or areas where market access is weak. Risks can be mitigated by ensuring that there is greater transparency with respect to contracts and operations whilst promoting information sharing on service provision. It is also important to develop cooperation and dispute settlement mechanisms that are workable for both the public and private parties.

Some other public sector actions are elaborated below:

Recognizing market gaps: Grants or other forms of incentives could be provided by the government to carry out local market assessments, test new technologies and develop new types of MOAS – such as quality certification and advice on contracts. Care is needed to ensure that this support does not compete with but rather supplements private sector service provision.

Seeking private sector funding: There is increasing pressure on public service providers to develop new sources of funding. This could be done through two strategies: (i) mobilizing funds from clients and third parties to pay for MOAS. This strategy has potential to enhance overall capacity and give enterprises a say in the allocation and utilization of funds. In doing so it provides incentives for service providers to perform more effectively; and (ii) transferring the provision of MOAS from public service organizations to others (private enterprises, associations, NGOs) who would be responsible for providing services on behalf of the government and international donors. Most public support services offer a potential for mixed funding and outsourcing, especially when revenues are growing as a result of chain upgrading. The mix of public and private elements depends on the type of support service, the possibilities of raising additional funds and the existence of alternative providers.

Support entrepreneurial initiatives: Rather than attempting to prescribe specific business models or visions of a future market, more effective and sustainable results emerge when the private sector is stimulated to design its own viable MOAS systems. Most important is the need to identify the profit incentives for MOAS providers and to clearly demonstrate to potential private sector collaborators the benefits that can accrue. When profit incentives are well aligned with public sector goals, programme support can help drive improved market and business performance that also benefits the poor.

Build capacity, information and knowledge networks: The public sector could use incentives and subsidies to develop local capacities. Capacity-building programmes could be designed to upgrade the entrepreneurial and technical skills of the private sector. Efforts can also be made to encourage sharing of information about market gaps, potential development strategies and potential business opportunities. Entrepreneurs within value chains could be supported through entrepreneurship training and the receipt of technical advice to take advantage of business opportunities.

Facilitating business linkages: Another area of public sector support is in facilitating business linkages by making introductions, helping businesses negotiate partnerships and designing public-private sector models of MOAS that are mutually beneficial.

Set up temporary support mechanisms: On the supply side, public sector programmes could encourage private sector development by setting up and funding organizations or projects to establish private sector MOAS service providers. Facilitating organizations should be proactive in linking interested service enterprises to growing markets.

Enhanced awareness among policy-makers of MOAS: Collaboration with the private sector calls for policies and actions by representatives of both sectors. Within the public sector awareness is needed among policy-makers and extension managers of the necessity to reorient extension services towards the market. This calls for a change in attitudes of decision-makers in supporting business and profits. There also needs to be greater understanding of the public and private sector roles and skill sets needed and recognition of how and where they can complement each other. This would provide justification for collaboration, cooperation and partnership. These complementarities are being more broadly appreciated as well as the unique characteristics and strengths that the public and private sector bring which when combined have the potential to offer a more efficient and effective means of support to smallholder farmers and rural entrepreneurs.

Better regulation: Whilst an environment for private sector engagement is desired, markets often fail and this justifies public investment. Public-private sector collaboration in financing runs the risk that some beneficiaries may be restricted to those who are able to pay user fees or tariffs. To counter exclusionary pressures public-private sector collaboration should take place within a suitable regulatory framework that provides greater confidence in the market while safeguarding the wider public interest. This could be through performance-based contracts that carry a universal, or nearly universal, service obligation. The public sector has a responsibility to manage open bidding procedures and monitor compliance of the contracts set.

Engaging NGOs in organizing producer groups and clusters: As touched on earlier, the public sector should work closely with NGOs as facilitators of producer organizations. Focus should be given to establishing networks and clusters of farmers and rural entrepreneurs, rather than providing support to individuals working on their own. The transaction costs of working with many small farmers and agro-entrepreneurs would be reduced by promoting effective smallholder organizations for collective action.

How can public sector support be provided without undermining the market?

Although there is no clear demarcation among the public-private services categories, it is clear that a number of core functions should remain in the domain of the government. But as we noted previously these core services also need to be focused towards creating a conducive environment for private sector development. While MOAS supports access to markets there is a clear understanding among many of those now seeking to promote market-oriented farming that there should be no significant subsidies to service providers, farmers and rural entrepreneurs. Subsidies weaken demand signals, which are the strongest indication that services are useful and appropriate to the customer. Subsidies can distort or discourage private sector service provision. There is also a failure to recognize that even disadvantaged groups may already have access to some services, and that this can be damaged by intervention. It is important for service providers to be held accountable to market pressures. This is a common opinion held by free market supporters. Additionally efforts should be taken to promote competition among MOAS suppliers and avoid crowding out legitimate private sector providers. Where competition is not assured, support could lead to a supplier becoming a monopoly, which in turn opens up opportunities for exploitation of clients. A market development approach is needed to encourage the expansion of service providers and the range of services offered to create a more competitive environment. The public sector could also focus on policy change which has the potential to benefit a broad range of stakeholders along product value chains. This is another way of avoiding market distortion. Finally, governments also have an important role to influence donor aid agencies to ensure that their support also does not distort markets.

Should MOAS be subsidized?

The situation in rural areas is, however, more complex and some subsidies may still be needed. As noted previously markets are weak in many rural areas and distorted; as a result there is a lack of private sector involvement as service providers and the capacity of clients to pay for commercial services. In these situations a strong case is made for subsidies to be provided at least in the short term to generate the necessary competition. In these situations it is common to find donors supporting MOAS service providers with subsidies. Often this support is intended to build their capacity and create a market for the services provided. Many of the case studies give examples of projects having received considerable donor and government subsidies. Although necessary at the time and justified, the continuation of such support into the future is unlikely to be sustainable in the long term. Consequently, some practitioners may feel that it is acceptable to subsidize direct service delivery for a limited time and phasing it out as the market develops.

No longer is it simply a question of how much subsidy to provide, for how long and how to gradually reduce it over time. The challenge for governments is how best to design subsidies in a way that develops rather than distorts MOAS markets. Governments and donors need to assess carefully the need for more proactive support to farmers where there are serious market imperfections and they may decide to provide transparent, well-targeted and temporary subsidies that ensure an effective allocation of scarce public funds. So-called, „kick start' mechanisms to promote the transition of services from the state to the private sector cannot be ruled out, and in some contexts may need to be actively promoted.

Some market development activities that temporarily subsidize service delivery as identified from the case studies include:

- Matching grants and vouchers that support service purchases;
- Contracting MOAS providers to support farmers and rural entrepreneurs;
- Operating or „deficit' financing to help MOAS providers get started and/or „equity' investments that may not be expected to be paid back at all;
- Providing capacity-building support to MOAS providers and clients;
- Providing MOAS services directly to test and develop new products; and
- Playing an active role in a chain in order to strengthen its linkages and develop the market.

Supporters of these types of subsidies point out that the short-term nature of many market development initiatives pushes them towards direct service provision in order to achieve immediate impact. Opponents of direct subsidies and service provision are sceptical about this „weaning' process and doubt the effectiveness of development organizations in establishing profitable private enterprises. Instead, they recommend finding private sector solutions right from the start. Even weak markets, they argue, are best developed by supporting local initiatives. The debate continues but is unfortunately often hijacked by political motives. Although the market development orientation challenges practitioners to get more out of each public sector dollar and to create sustainable advisory services, the era of subsidies is far from over and the challenge of how to use them most productively has only begun. Subsidies need to be designed and applied wisely.

How can the capacity of the weak be best built up?

Aside from promoting economic growth, it is often necessary to build the capacity of the weakest partners – marginal farmers, the landless, youth and women – if change is to be sustained. The record of supporting women farmers and entrepreneurs in the region, in particular through extension services, has been abysmal. „Feminization' of agriculture is an increasing phenomenon in the region and this dynamic has been unmatched by gender-focused support. The lack of attention paid to women's development represents an inefficient use of a critical resource that is not utilized up to its potential.

Specific measures are often needed to ensure the inclusion of these vulnerable groups by identifying demand and designing strategies and programmes targeted at them. However, not all of these categories can be organized and channelled towards market-led production. Some of the landless migrate in order to generate a primary or supplementary income and the elderly may require welfare assistance, possibly through safety nets. Yet there is scope for targeted programmes that aim at reaching rural youth and women that have the potential to contribute to economic growth. These categories of the poor are often those most targeted in pro-poor value chain development-type projects. This is of particular concern for donor agencies and NGOs that place poverty alleviation high on their agendas.

The importance of the role of women needs to be better recognized and a targeted strategy of enterprise development assistance should be drawn up. Organizing women into gender-specific groups has been an effective and common approach used in the region for empowerment. By working together in groups, confidence is created and the risks of market failure are often shared. Entrepreneurial members have been seen to emerge and take the lead in securing microfinance or other resources for the group and even negotiating contracts for produce sold. Women also have the opportunity to share information among themselves in other areas of work related indirectly to economic development – improved family nutrition, hygiene and health care especially for children. In short, a gender perspective should also be appreciated as an integral part of MOAS.

Enhancing value adding through women's SHGs, India

The Government of India has supported the formation and development of SHGs as a mechanism for empowerment and development of women. An initiative led by CIPHET, a unit of the Indian Council of Agricultural Research, targeted women and aimed at enhancing their role and developing their capacities in value-adding farm enterprises. Field staff affiliated to the organization facilitated the formation of women's SHGs and developed their capabilities through tailor-made training programmes in postharvest handling and processing. Access to finance was critical for the SHG enterprises to develop and the programme facilitated linkages with public sector banks to mobilize capital. The role of rural women as economic actors in India is imperative to increase the production potential and improve the socio-economic status of rural households.

The notion of inclusivity in value chain development is being promoted by some organizations in Asia (in particular in the South Asia subregion). One such example is the work of the Dutch agency (SNV) which has developed its „inclusive business' approach in Nepal, Bhutan and Bangladesh based on experiences in Latin America. The objective is to serve low-income people at the Base of the Pyramid (BoP) – those living on less than US$2.00 per day. Inclusive business is part of a search for sustainable business models that „do well by doing good' and have the potential to create a development impact at scale.

Inclusive business

The inclusive business approach aims to: (i) reduce poverty by selecting cash crops and forest products with high return potential and promising employment opportunities for smallholder farmers and forest users; (ii) increase social and environmental responsibility by mainstreaming corporate social responsibility and implementing codes of conduct in production, processing and marketing; (iii) ensure social inclusion by addressing the needs of marginalized and socially excluded people involved in selected value chains.

The process integrates low-income households in product value chains as suppliers, distributors and consumers of goods and services and 'works back from business' by identifying value chain leaders and developing linkages with small farmers and vulnerable households. Producer-buyer contracts are advocated linking production to guaranteed markets while ensuring a high level of transparency. The contracts usually specify cultivation practices, the quantity and quality to be supplied, the price offered and delivery times. Attention is given to developing niche/differentiated products. The approach is original combining poverty alleviation with profits and business development. Effort is made to create competition and avoid market distortion and monopolistic behaviour of private companies.

Value chain development involves the following steps:

a) Selection and assessment of prospective participating agribusinesses and their business proposals on the basis of standard criteria.
b) Formulation of value chain business plans, supported by signed implementation agreements between the involved parties.
c) Implementation of value chain business plans with each party taking up its role and responsibilities, including contract formulation, production and processing and contract fulfilment.
d) Participatory monitoring of progress where adjustments are made and impact is evaluated.

SNV Nepal, personal communication

4. LESSONS LEARNED AND SUCCESS FACTORS

The enabling environment for business

The features of the MOAS system - the actors, attitudes, practices and patterns of interaction - are shaped by the enabling environment which in turn is essential in promoting MOAS. The case studies, however, suggest that reforms of parts of the enabling environment may be adequate to promote commercialization. Some examples show that the enabling environment for business can be improved pragmatically and may not require immediate or comprehensive policy and institutional reform. Market-oriented infrastructure is often regarded as a prerequisite for developing a competitive value chain and encouraging private sector investment. Thailand, China, Viet Nam and Indonesia have invested heavily in this area of support. Other countries have dealt with other aspects of the enabling environment particularly where investment capital for rural infrastructure has been scarce. Some of the focus has been placed on the regulatory and legal environment. An example of successful legislation is the 1992 Foreign Trade Development and Regulation Act passed by the Government of India which attempted to redress the impending loss of biodiversity for medicinal and aromatic plants. The act compels companies to declare the source of their raw material and prohibits the export of a list of endangered plants. This legislation by itself opened up new market opportunities for small-scale farmers producing medicinal plants and resulted in income and employment gains (Singh and Swanson 2000).

Changes can also occur within the existing policy, legal and regulatory framework by focusing on rearranging the institutional aspects of the business environment. Examples of areas of intervention include: (i) improving the access of clients to production, market, business and legal information; (ii) developing knowledge management capacities in public sector institutions as well as among producer organizations and civil society; (iii) enhancing the bargaining capacity of farmers through collective or cooperative arrangements; (iv) introducing anti-corruption and rent-seeking measures among public sector regulatory agencies; (v) creating an environment of transparency and due diligence among public institutions and greater civil society participation and government interaction with business; and finally (vi) improving the performance and accountability of the government. These limited measures have been quite effective in those countries where the political will for comprehensive change is absent.

However, even when a conducive enabling environment is created, the *attitudes* and *practices* of policy-makers sometimes constrain the development of sustainable innovation capacity in a fundamental manner. Policy interventions are sometimes ineffective unless they are accompanied by efforts to change prevailing attitudes and practices among policy-makers and other senior decision-makers (World Bank 2006b). Often policy-makers regard business in a suspicious way and as inherently exploitative and this requires attitudinal changes in order for market-driven approaches to take hold in a sustainable way. Additionally, policy-makers need greater understanding of the potential impact of public sector investments. The capacity to understand, analyse and influence the policy-making process is scarce among planners and middle management and policy-makers themselves often have limited understanding of the effect of policy changes on MOAS. If MOAS capacity is to become stronger, policy capacity will also need to be strengthened.

Public sector practices

Institutional changes are needed to promote MOAS and innovation at all levels and within all sectors. While private sector involvement is vital to provide additional investment resources and to develop business, these changes cannot occur in isolation from revitalized public sector institutions that support market development. While the innovation system is broad, it is the agricultural extension service that is the key institution for MOAS development. As governments in the region shift from national food security as the primary national goal to improving rural livelihoods and access to markets for smallholder farmers, the focus of public extension must broaden to pursue a more diversified strategy that includes the introduction of new high-value crop and livestock enterprises.

This shift in focus is noticeable in China, India, Sri Lanka and Nepal and in less pronounced ways among other extension systems in the region.

Often ‚good practices' of public sector reform call for interrelated strategies that include decentralization that allows extension personnel to better confront local heterogeneity and a dispersed clientele. Bringing the government closer to the people promises to make extension more responsive to farmers' needs. Coupled with these changes, public extension systems are shifting from technology transfer to human resource development although the pace that is needed to have a noticeable impact has been slow. There are, however, innumerable good practices including farmers (male and female) being organized into groups (i.e. building social capital) and successfully producing and selling high-value products.

Public-private sector collaboration

As noted previously, public-private collaboration is required to increase investments in agriculture, mitigate risks and promote private sector activity. However, the forging of effective public-private partnerships does not occur by itself and there is a need to explore the range and types of potential partnership arrangements that could be pursued. Both donors and practitioners increasingly recognize the potential benefits that can accrue, but partnerships always need to be encouraged through effort and commitment from both sides. Partnership must be based on genuine demand, clear expectations and realization of the short- and long-term benefits to both parties.

A number of mechanisms have been used in the region to share the responsibilities and risks between the two sectors. These include contracting out service delivery tasks to the private sector, financed by a combination of public funding and private payment; delegating service provision to non-government or membership organizations financed by levies, membership fees, or public funding; and joint ventures between the government and the private sector. The record of these partnership arrangements has, however, been mixed.

In Chitwan, *Nepal*, an action research exercise concluded that **e**fforts to transfer agricultural technologies to farmers were more effective when the state, NGOs and private sectors worked in partnership. While the focus of extension was largely on technology transfer, the study revealed pertinent findings that could also apply to MOAS collaborative arrangements. The findings suggest that when the government, NGOs and the private sector engage in partnerships, their effectiveness is generally increased. Each body has different strengths and weaknesses. NGOs are particularly effective at reaching resource-poor farmers and facilitating farmer groups, while the government usually has greater technical capacity. The conclusions drawn are that different partnerships are appropriate for particular goals. Government and private sector partnerships are better for high-value enterprises with more commercially-oriented farmers, while government and NGO partnerships are better at reaching smaller farmers. The partnership programmes must be mutually beneficial and continuous dialogue between partners is necessary. For partnerships to be effective their design must be based on a clear understanding of the comparative advantages of each party (Ohja *et al.* 2001).

In *Viet Nam*, the public sector extension service has also been shifting its focus towards public-private sector collaboration. But the success of the approach depends on the category of farmers and the potential for private investment. Clients of extension mainly comprise three groups: (i) poor farmers often with a subeconomic farm size, and/or extremely weak links to the markets (the largest group and with many ethnic minorities); (ii) groups of better-off farmers, producing for household consumption and for the market (they have some capacity for investment); and (iii) a relatively small number of well-off farmers, often called industrial farmers, who own larger plots of land and have good capacity to invest. The public sector extension service focuses mainly on technology transfer, targeting farmers capable of carrying out demonstrations and potentially interested in technology adoption. In contrast, more market-oriented farmers are regarded as clients and agricultural extension staff are expected to link them to commercial buyers. In practice this means that field workers have permission to act as sales agents for commercial companies. This is a major activity for many extension staff and is a

source of supplementary income. At the extreme end of the continuum is the government strategy of agricultural commodity promotion that involves the highest level of commercialization. The strategy adopted is to avoid government involvement and to provide incentives to the private sector (subsidized finance, preferential access to land) to undertake contract farming schemes directly (Goletti *et al.* 2007). Differential models of successful public-private sector arrangements need to be understood.

Public-private partnerships (PPPs) – examples of successes and failures

Agri-Business Corporation (ABC), Bangladesh. ABC is a private company that operated an enterprise-extension programme for seed-producing farmers by providing technical, financial and business management assistance. The company provided some services to clients including buy-back guarantees and subcontracted others through public and private sector service providers. The public sector was responsible for selecting farmers to produce seed and linking them through the preparation of contracts with ABC. A financial institution was involved in the schemes to provide farmers with working capital; the loans were channeled through the company.

Agripreneurship programme, India. This scheme was sponsored by the Government of India and aimed at (i) supplementing public extension efforts; (ii) providing specialized extension services; and (iii) creating self-employment opportunities for unemployed agriculture graduates. The scheme provided free training in agripreneurship development to unemployed agriculture graduates and provided them with loans to establish them in agribusiness related enterprises. In addition the graduates were expected to provide clients with technical advice (Chandra-Shekara 2005).

Export Production Villages (EPVs), Sri Lanka. This scheme was designed in the 1980s and aimed at linking export enterprises to Export Production Villages (EPVs). The EPV model facilitated the integration of farmers into an export-linked business. The village producers signed supply contracts with the exporter and formed 'Peoples Companies' in which producers had a profit-sharing arrangement. The public sector facilitated linkages with export-oriented enterprises and formal contracts were established between the producer and the exporting firm. Various MOAS services were offered to the producers by private service providers with the costs embedded in the purchase price of produce. As the EPVs were highly dependent on political support receiving free or subsidized services from public funds, their success heavily depended on political support at the provincial level. The heavy subsidies and political patronage restricted the sustainability and up-scalability of this model.

Smallholder Tea Development – Sri Lanka. The tea industry in Sri Lanka is vital to the development of the agriculture sector. The knowledge dissemination system to smallholders is divided into public and private channels. The public channel focuses largely on technology transfer from the Tea Research Institute and the Tea Small Holdings Development Authority. The public sector, however, is unable to meet the increasing requirements and demands of all tea smallholders due to limited field staff. These service providers are supported by private extension services that are market oriented and operate through bought leaf factories – agro-input and service-oriented agencies. The private sector extension providers supply farmers with purchased inputs largely on a credit basis. Although this suggests a collaborative relationship with the private sector supplementing the public sector activities in both cases there are weaknesses with too much focus on production and inadequate consideration given to postharvest handling, marketing, contract negotiations and business skills development. Moreover, the capacities of extension staff are also limited, particularly among the private sector providers. There is also a weakness in coordination and no monitoring of private sector activities by the public sector (Amarathunga *et al.* 2008).

Village Based Private Service Delivery Project, Thailand. The project has been operating over the past decade supported by the Royal Project Foundation set up by the King of Thailand. It targets small-scale farmers living in the remote highland areas of northern Thailand and covers three main activities: research, extension and marketing. Public-private sector collaboration is successful as it is cemented by the moral authority of the King of Thailand – which creates a common vision and commitment. The project includes a broad range of partners and stakeholders at central and local levels that include government extension departments, financial institutions and private sector buyers selling under contract to domestic and export market outlets.

Some of the case studies show that public-private sector collaboration in the provision of MOAS has considerable potential to address the challenges and risks but this depends on the nature of the services and support that each party provides and the overall management and governance of the relationship. Open and transparent communication is a vital prerequisite for success and this requires an appropriate set of enabling conditions to exist. While in the case of Thailand the nature of Thai society and its acceptance of the authority of the King ensured that the linkages and relationships were sustainable, the extension services provided by both the public and private sector are conventional: public extension focusing on production and technology transfer and the private sector on commercial marketing. Information for farmers on marketing is limited and there has been no attempt to improve the negotiating power of the producers. The case also identified the need to support more strongly the development of farmer groups which might suggest more responsibility for NGOs as facilitators.

Conditions for successful PPPs

- *The common interest-space condition:* Viable partnerships develop only in the space where the interests of the public and private sector overlap, as determined by technological, market and public demands in the agricultural value chain.
- *The cost-benefit condition:* Partners enter partnerships when the expected benefits outweigh expected costs.
- *The synergy-through-collaboration condition:* Partners enter partnerships when the expected benefits are higher than those from equivalent investments in other arrangements.
- *The no conflict condition:* Partners enter partnerships when the partnership does not substantially conflict with other interests of the parties, or where the partnership does not generate substantially negative externalities for society.
- *The proportional benefits condition:* Partners enter partnerships when their own contributions and expected benefits are not disproportionately lower than those expected for the other partners.

Adapted from Hartwich *et al.* (2005)

The main challenge for public-private sector collaboration is to create adequate incentives for initiating the partnership relationship. The less successful cases show that there was a lack of strategic planning and priority setting among public and private partners to determine where advisory services and extension were most urgently needed and where the greatest positive impact could be made. Instead, partnerships were created mainly because: (i) a public sector extension organization realized that partnering with the private sector would provide access to either public grants or private funds; (ii) private firms sought collaboration when they were unable to invest and provide services and innovations on their own; and (iii) local small-scale farmers and processors tried to obtain public support to increase the value added of their agricultural production and raise the quality of their products to access local and international markets. These are important lessons so that more successful partnership arrangements can be made.

Multistakeholder coordination

As farming becomes more commercial and value chain development is promoted public sector responsibilities expand and diversify beyond ministries of agriculture. Market development often requires the involvement of other ministries including trade, commerce, industry, planning, finance, public works and education. Moreover, as noted in this study, value chain stakeholders also include the private sector and NGOs and successful value chain development requires strong vertical coordination behind a common vision. Coordination failures can easily occur when public sectors work independently of one another and value chain stakeholders are isolated or disconnected. This often results in investments being made that fail to complement each other. The ability to agree on the innovation challenges facing a sector is much greater when value chain coordination is in place. Coordinated public, private and civil society actions can reduce transaction costs and reduce risks for private investment in critical services for smallholder agriculture. Value chain coordination makes it more feasible to link policy support and innovation efforts and to focus on those enabling activities

that actually support change (World Bank 2006b). Thus, improvements in the enabling environment will be more effective if they are combined with activities to strengthen other aspects of enterprise development (particularly the patterns of interaction among the main actors) and if efforts to strengthen the enabling environment focus on identified innovation needs, addressing the need for sector coordination.

Horizontal and vertical cooperation requires the establishment of coordinating mechanisms. Within the public sector coordinating bodies may need to be established both within a single ministry and between ministries. Moreover, as the private sector has an increasingly important role to play it also needs to be consulted and participate in coordination platforms. The success of the MOAS system depends on both the effective role of all bodies in the system and their coordination and synergies. The public sector, however, has an important role to oversee the system, to diagnose problems and appraise the impact of trends and policy changes. In order to play this role effectively, public sector coordinating departments require capacity-building support.

Some partnerships have also been developed at the local level between the private sector and the government. In India, ATMA provides a good example of a platform for public-private partnership and a decentralized decision-making body that calls for the participation of a broad base of stakeholders, including rural women and disadvantaged groups (Singh *et al.* 2005). It is also intended as a mechanism to empower farmers through the formation of farmer based organizations and their increased participation in planning, marketing, technology dissemination and agroprocessing. ATMA also provides an opportunity for the private sector be organized in a similar manner to farmers to more effectively engage in public-private dialogue. It is a model that is being replicated in various states in India with potential for further replication in other countries of the region. The example ensures greater potential for sustainability as service provision and facilitation functions are partly shared by the private sector.

ATMA, India

In the ATMA model, all policy decisions concerning extension priorities and financial decisions were under the direct control of the ATMA Governing Board (GB) composed of a cross-section of stakeholder representatives from across each district. The intention of ATMA is to identify location-specific needs of the farming community and to plan and execute extension activities in a coordinated manner. It is also intended as a platform for public-private partnership and a mechanism to empower farmers through the formation of farmer-based organizations and their increased participation in planning, marketing, technology dissemination and agroprocessing. ATMA has proved to be an effective platform for public-private sector dialogue, bringing all public sector departments, NGOs etc. to a common forum. Funds from the central government together with the state for all technology transfer and extension activities are pooled within ATMA and released for various activities according to a Strategic Research and Extension Plan prepared for the district.

Singh, Swanson and Singh (2005)

ICT innovations

There have been vast technological developments in ITC in the region, especially in South Asian countries. The Internet, mobile phones, cyber hubs and village kiosks are examples of technologies and structures that are making particular headway in Asia and in the rural areas. Most of the MOAS effort to date has been focused on market information systems that include the collection and dissemination of freely available information on prices and market outlets, which place farmers in a better position to negotiate meaningfully with commission agents and intermediaries to attain premium prices. If it can guarantee that real time information on transacted prices and quantities is collected and shared, market information is essential. Grades and standards developed in collaboration with trade will also enhance this information and therefore merit early analysis. Differing qualities within a broad category of standard quality produce are frequently identified by traders, so capturing this informally recognized diversity (i.e. quality grades) and incorporating it into reporting of market prices and

quantities can be an effective move. Real time feedback to farmers on quality problems in the market that can vary seasonally (based on pest outbreaks on the farm) and technical solutions at the farm and postharvest levels can be a very useful approach. In normal circumstances, such information comes from wholesale markets where prices and discounts for quality problems are formed.

Less headway has been made in providing farmers with information on agribusiness opportunities and this requires more concerted attention on the specific data requirements and methods of collection. Examples of additional marketing- and agribusiness-related information that could be provided include input prices and availability (including seed, fertilizer, chemicals, credit and irrigation and other equipment); this would help agribusiness companies to buy produce and technical information on recommended seeds and inputs. If this can be combined with use of the Internet there is potential to develop entrepreneurship training programmes for small producers and rural entrepreneurs covering the skills required in production planning, profitability analyses, cash flow forecasts and the development of business plans.

While ICT provides opportunities there are also challenges, most notably to expand ownership in the rural areas, and find ways to reduce the costs of outreach. The burgeoning use of mobile phones is one way to reduce these costs and to bring an array of timely information to farmers, traders and agro-entrepreneurs on aspects of marketing and agribusiness. There is evidence of improvements in market efficiency after the introduction of mobile phones through their effect on reducing the cost of information needed for spatial arbitrage (Jensen 2007; Aker 2008). Interestingly, the proliferation of mobile phones did not warrant any funding; private mobile phone providers invested in the systems and farmers and traders used the technology to search more widely and quickly for price information through their own contacts. The challenge now, especially in light of the vast expansion of mobile phone ownership among smallholder farmers over the past six years or so, is to find ways, when possible through public-private collaboration, to broaden the scope of information provided in this way. Some examples are:

- In India, an SMS-based system automatically provides bid price and contact information for products in markets nationwide; the system is inexpensive because buyers perceive the advantage in providing the information at no cost.

- Similarly in Sri Lanka an SMS system provides gherkin farmers with daily information on issues related to produce in the market which assists them in immediately avoiding problems on their farms (De Silva and Ratnadiwakara 2005).

- Also in Sri Lanka another project aims to lower information search costs throughout fresh produce supply chains via SMS, e-bulletin boards, price-reporting screens in markets and links with banks and extension services (De Silva and Ratnadiwakara 2005).

- Since 2004, work has been ongoing in Sri Lanka to develop a cyber extension network as the country's foremost ICT initiative in agriculture. To date over 50 Cyber Extension Units have been established in various districts.

- Mobile ICT units also represent an innovative example tried and tested in some countries.

In exploiting this opportunity, the key constraints are identifying the most useful information, supplying it sustainably and packaging it in the most suitable dissemination channels. Literacy and language barriers are also fundamental problems in many countries, especially where different ethnic groups are found. Work is ongoing in donor-funded projects to use SMS to promote functional literacy in this context (R. Erskine-Smith, personal communication). In India and Bhutan Interactive Voice Response (IVR) systems through mobile phones have been particularly innovative especially among the less literate farmers. Even in those areas without electricity, farmers are using mobile phones and are charging their batteries with small hand-driven generators and torch batteries. Learning from this and other initiatives that provide opportunities to scaling up should become a top priority.

Market Information System (MIS) for farmers – using IVR, Bhutan

This SNV-funded project provides farmers with access to market prices through their mobile phones using an IVR system, which allows farmers to hear the prices of their closest market in one of four languages – Dzongkha, Sharshop, English or Lothsam. A database of market prices has been established by the Department of Agricultural Marketing and Cooperatives in collaboration with the Food Corporation of Bhutan (FCB), and is updated daily with the range of prices from each of 11 market centres. Prices from the five largest markets are reported by the MIS. From this database, a Web site was set up in collaboration with the Department of Information Technology (DIT), providing easy access to price information (www.agrimarket.gov.bt). But as most farmers do not have Internet access, it does not go far enough. Information is also available periodically via radio, newspapers and TV. This also does not meet the need, as farmers generally do not have access to these outlets. The mobile phone-based information system is accessible to around 60-70 percent of farmers where there is coverage but these figure are increasing. An automated 'pull' system has been designed where farmers dial only four digits (2009) and receive price information following an 'information tree'. Farmers are first asked to select their language, and are then asked to select from five markets. The latest prices are then read to them. As the information is mainly numeric, experience in other countries indicates that even illiterate users soon learn to benefit from the system. The cost of calls is low in order to encourage farmers to take advantage of the system. In developing the system a series of trials was conducted showing that 89 percent of locations were reachable. The system is implemented with the support of staff from the Department of Marketing and Cooperatives and the Ministry of Agriculture Extension who have an important role in building farmers' skills in understanding and calculating market margins and plan and time production to avoid oversupply and gluts.

Dr Rob Erskine-Smith, Market Advisor, SNV, Bhutan, personal communication

As efforts proceed to capitalize on opportunities provided by ICT there are two significant issues to note. First, the availability of information through SMS systems is likely to be much narrower than that reported on national radio. Second, mobile phones currently are not likely to reach as many farmers as local and provincial radio broadcasts in the local language due to literacy and cost constraints. While modern ICT tools should be used, radio is likely to remain, for the time being, the most effective means of providing broad-based unbiased information to help improve the bargaining power of farmers and in informing public decision makers about how markets function.

Besides public sector initiatives there has also been considerable private sector investment particularly in India. ITC – one of India's leading private companies – initiated the e-Choupal effort that places computers with Internet access in rural farming villages. The e-Choupals serve as both a social gathering place for exchange of information (*choupal* means gathering place in Hindi) and an e-commerce hub. These efforts have created a highly profitable distribution and product design channel for the company – an e-commerce platform that is also a low-cost service system focused on the needs of rural India. The system has also helped to alleviate rural isolation, create more transparency for farmers and improve the productivity and incomes of farmers.

Sri Lanka – cyber extension

The cyber extension programme uses interactive multimedia as an information database and to develop low-cost audiovisual aids. The programme pursues four strategies: (i) use of interactive multimedia CD-ROMs as crop-based information material; (ii) use of interactive multimedia to develop low-cost audiovisual aids; (iii) Internet delivery mechanisms with CD-ROMs; (iv) developing digital training material for extension and training; and (v) distance learning mechanisms. The programme focuses mainly on the provision of production-related information and market price information. In 2007 a farmer database was established through the cyber extension mechanism to solve marketing problems. However, update of the database was not sustainable owing to shortages of field personnel. Another challenge faced has been to expand the outreach to farmers from Agrarian Service Centres and create a demand for these information services. One consideration was to establish cyber user groups and set up joint ventures with other rural knowledge centres.
Wijekoon and Rizwan (2009)

Public sector initiatives have also focused on local private sector-run information businesses. Communities and potential rural entrepreneurs have been assisted to operate as informal information search and distribution agents; sometimes called *infomediaries*. In order to participate in these programmes, information providers need to be familiar with the structure of the rural communities and keen to set up business as information suppliers. Public assistance has also been available to provide training in accessing and searching market-related information through both the Internet and conventional sources. In some cases *infomediaries* access Web sites themselves and sell the downloaded information to local enterprises and individuals in the local community. The costs of running the information service can take place at two levels – farm and service provider level – but cost recovery among farmers is less likely to occur although potential might exist for rural entrepreneurs to pay for information products. At the meso level and particularly in proximity to market centres there is a greater possibility that revenues can be generated to cover costs and to make it a sustainable business enterprise.

Information services provided through cyber extension systems from the central level have considerable potential to be privatized. Evidence from other regions (Africa and Latin America) shows that private service providers can make the provision of information into a sustainable business enterprise when they are paid to search for and update information as well as maintain Web sites. It is at this level that the most significant costs are incurred (salary of a competent person, the costs of information searching and payments to an Internet service provider). While public sector agencies may set up such systems (cyber extension in Sri Lanka and the e-extension service in the Philippines) potential exists to cover some of these overhead costs by attracting private sponsors. Although not fully proven, it is believed that sponsorship remain a viable means to pay for central service management. By designing such schemes around a centrally-managed Web site, replication is simple and cost effective. Wherever the Web site can be accessed, the benefits can quickly be replicated.

Farmers and rural entrepreneurs seem to be more interested in accessing the Internet for information than originally supposed. When *infomediaries* approach farmers and rural entrepreneurs with useful information some of the more innovative farmers and processors express a wish to access Web sites directly. When it was demonstrated that accessing the Internet could be relevant to their specific needs, they were keen to try it for themselves.

The underlying issue here is the perceived relevance of the information that can be downloaded for farmers, many of whom are smallholders. The cases provide some evidence that if relevant content is made available even smallholder farmers will find ways of becoming active users through their own endeavours. This supports the lobby which calls for more concentration upon content development and less emphasis upon access alone. While there seems to be considerable potential there are users that are likely to find the information to be intangible and abstract.

More emphasis should be given to the type of information that is appropriate for farmers and entrepreneurs, On the one hand, there is generic business information (for example, advice on record keeping and market information for staple products), and on the other hand, specific information (for example, market information for selected high-value crops). The generic information is likely to have a broad audience and is reasonably cost effective to research, collate and present. The more specialized – product-specific information – has a smaller potential audience, but because it is scarce it can be regarded as a premium product, for which a higher price can be demanded. In the former case the information available is cheap and in the latter case the research in collecting the information is more expensive. Generally, specialized information is not easy to produce and requires specialized MOAS support.

The lessons drawn from the case study evidence suggest that:

- Investments in ICT infrastructure and hardware alone will not guarantee appropriate information for sustainable livelihoods. ICT should be seen as a bundle of support that includes both hardware and software such as relevant messages and content.
- Solutions should be developed that that leverage the numeric literacy that even those who cannot read and write usually possess.
- ICT should be carefully planned and computers should be deployed in locations where there is adequate infrastructure to operate equipment effectively and avoid common problems of erratic electricity supply and limited connectivity.
- The literacy level of users and the level of technical competence of the support teams are crucial for an effective system to work.
- Efforts should be taken to incorporate ICT into existing information services. This requires careful planning, training and a long-term perspective.
- In order to ensure that the full potential of this technology can be realized in benefiting smallholder farmers, a cadre of local intermediaries should be encouraged to deliver appropriate information to farmers and rural entrepreneurs using ICTs in conjunction with traditional channels, on a cost-recovery basis.
- Existing schemes that use ICTs successfully and sustainably should be identified and, if appropriate, replicated on a national and regional basis.

Support to private sector service providers

Local service providers

Providing services locally to rural community members involves developing a pool of locally identified farmers and rural entrepreneurs to provide quality services. In many cases in most countries of the Asian region rural communities provide a cadre of para-extension workers and local service providers that include lead farmers in both crop and livestock husbandry as well as input dealers, traders, moneylenders and rural entrepreneurs that live in villages or towns. Support services can be provided on either a voluntary or fee-paying basis depending on the effective demand for them. Lead farmers, community activists or social mobilizers are identified, selected and trained to act as repositories of indigenous knowledge on local farm practices and private sector informal service providers have been used to provide commercial and advisory services as well as to broker information on improved agricultural practices, technologies and market-related information. The development of this cadre of service providers forms part of livelihood, value chain and agribusiness development projects.

The local private sector service providers work independently and are particularly effective in supplying advisory services often as a supplement to commercial services and inputs. The cadre of service providers is well suited to serve the interests of clients especially if they operate in areas with high agricultural production potential, good infrastructure and access to well-developed markets. The profit motive and the entrepreneurial nature of private providers ensure the potential for both growth and sustainability. Delivery of these services in an effective and efficient manner generates potential to increase profits both for the service provider and the client and this in turn ensures that recipients are able to pay for the support received. But because of its primary interest in generating profits, private sector extension sometimes concentrates on serving the needs of the larger, resource-rich farmers to the exclusion of others. Efforts have been made to capture some of the „innovative' examples of community-driven MOAS in the region.

Three examples from South Asia are presented below:

Pakistan: Community marketing is a notion that has been encouraged in some development project in Pakistan.[6] The USAID-funded and FAO-implemented Balochistan project developed a cadre of

[6] The Empower Pakistan: Balochistan Agricultural Livelihoods (BAL) project is a direct follow up to the USAID-funded Food Security/Poverty Alleviation in Arid Agriculture Balochistan – Pilot Project Phase.

Community Development Marketing Facilitators (CDMFs) responsible for building the capacity of rural community organizations in marketing. The CDMFs are selected from within local communities to work as community development facilitators. As their role evolves they take on responsibility for marketing extension, providing groups with market information and facilitating linkages with buyers in the project area. To be effective in this role they need skills and capacity to facilitate linking community organizations to markets. However, for market-oriented services to become and remain useful to the target beneficiaries it is essential that the service providers have continuous access to back-up services that help to build, maintain and update their capacity. An important area of back-up support comes from the core trainers of the CDMFs.

Other examples of local service provision in Pakistan have emanated from private sector entrepreneurs selected to act as sales agents as well as to provide business development service to farmers and rural entrepreneurs. Two organizations, MEDA and ECI, have relied on this cadre of entrepreneurs to provide advisory services whilst embedding the cost in the commission received for produce sold.

Business activists, ECI, Pakistan

ECI was hired to develop a cadre of business service providers. As public sector extension workers are mandated to provide general extension services to the large majority of small farmers, there is a vacuum in supporting the business aspects of farming. The approach taken was to identify local entrepreneurs and train them as market facilitators – activists. The private sector entrepreneurs needed to have a strong background in agriculture and related businesses. ECI developed a rigorous process of identifying the right persons and developed a training methodology and programme with ongoing mentoring support. The criteria for selection ensured that the activists were successful in running a business and were committed to leading and facilitating the marketing processes. The approach followed was to identify two business service providers (one male and one female) from villages located within a Union Council. Appropriate training materials were developed by ECI and a training of trainers programme was developed. The business activists were responsible for social, economic and management activities including group development, training and mentoring of market-oriented farmers and rural businesses in selected business/marketing-oriented subjects. They also had a role in linking farmers to markets. Ultimately, the activists came together to form a Common Facilitation Unit located at the district level as a hub for business development service provision and a training and support centre.

Personal communication

Nepal: A variation of this model is for service providers to be located at a higher level covering a broader catchment area. There have been a number of donor-funded projects in Nepal – particularly supported by the International Fund for Agricultural Development (IFAD) and USAID – to develop service providers from within local areas. These interventions aim at developing and strengthening a pool of locally-identified farmers and rural entrepreneurs to provide quality services to the community. Service provision is also expected to be made on a voluntary or fee-paying basis. The service providers comprise rural input dealers, traders, seed producers, agroprocessors and lead farmers. Cooperatives and service provider networks are also encouraged. In some of these projects, village representatives are identified to collect market information and advise other community members on aspects of marketing. These unconventional information providers are called „Farmer Market Facilitators', and are expected to travel to both local and more distant markets and negotiate deals with potential buyers while remaining in constant contact with their home community using mobile phones. Community members have developed a system of payment for the information provided differentiating it based on its public or private goods nature.

Another example that has been promoted by donor agencies in Nepal is the notion of Marketing and Planning Committees (MPCs). This is an innovative intervention introduced by USAID agriculture

programmes in various parts of the country. The MPCs are ostensibly collection centres represented by farmers and other stakeholders involved in marketing and are particularly effective in the more remote locations of the country where basic services are lacking. They also serve to mobilize local resources and train farmers in concepts of marketing. The structure is represented by an elected board that provides management oversight to entrepreneurs and cooperatives to run the centres. The committees provide a key economic function of aggregating smallholder produce. This has been done for a range of commodities including vegetables, fruits, goats, fish, coffee and tea, as other specialty products. The collection centres aim at ensuring that the volumes sold are of adequate size to attain premium prices. In addition, they provide important services to their members including crop/commodity planning, technical assistance, supplies of quality inputs and credit, and marketing. Most of the services provided, however, are non-advisory and include vegetable collection and aggregation, access to weighing facilities and storage and the sale of agricultural inputs. MOAS advice covers crop production planning, grading, packaging and transportation, and market price information. The advice and information is supported by training courses – albeit mainly in technical areas of work. In addition to supporting software services the MPCs play a key role in mobilizing community resources for investment in small-scale infrastructure. The vision being developed is for MPCs to become sustainable self financed institutions with potential for expansion and further development at district, regional and national levels in various apex bodies. The higher-level bodies are critical to lobby, monitor and coordinate development programmes with government agencies and political parties.

Bangladesh: Another example of community-led marketing is a project in Bangladesh. The Livelihoods, Empowerment and Agroforestry Project (LEAF) is an example of community-based organizations being empowered to identify and exploit market opportunities and develop skills to increase their capacity to undertake independent market investigations. The project fostered the training of community groups in a methodology that advocates group decision-making with special attention to the most vulnerable, establishes a task force committee for market analysis and examines a broad range of products to diversify marketing options and reduce some of the risks associated with market-led farming. The marketing extension process follows six steps: (i) assessment of existing products; (ii) analysis of selected products; (iii) conducting the market survey; (iv) analysis of the market survey; (v) selection of marketing strategies; (vi) development and implementation of the action plan.

Local service centres

The trend towards decentralization has provided opportunities for local management of resources and provision of MOAS. In some cases local service centres at district or even village levels have been set up as information and service points for producers scattered in local catchment areas. Individuals – local-level service focal points – have also been used in some cases to inform service providers of the demand for services within a local community and their willingness to pay for the services rendered. The local service centres are ostensibly one-stop shops that aim at addressing the needs of both farmers and rural entrepreneurs. In Bangladesh, the concept of the Agrimall has also been promoted and designed with similar objectives in mind.

In peri-urban areas and those that have greater prospects for commercialization these hubs are called Agribusiness Service Centres providing a wider range of more specialized technical assistance and consulting services that include processing, packaging, transport, quality assurance as well as business planning and financial management. The centres provide benefits to both farmers and entrepreneurs by avoiding the need to access several different sources with different requirements.

Service provider associations

In some Asian countries, including Bangladesh, service provider associations have been formed to better coordinate activities and generate demand. Some of these organizations have been set up through donor-funded projects (Bangladesh) but in others (Nepal, India) the associations were formed

spontaneously or with private sector involvement. Some of the stronger associations are even affiliated to local chambers of commerce. The development of service provider associations is an evolutionary process that occurs when local service providers realize that there is a high demand for local service markets and by establishing an association, they are in a better position to coordinate the provision of services to communities and to expand their network with line agencies, research and extension organizations, NGOs and the private sector. Service provider associations can improve service quality by drawing in the best service providers to become part of the association. Over time some service provider associations have expanded the scope of services offered to rural clients by attracting other informal service providers (lead farmer, traders, dealers) to join the association. This creates a win-win situation, where informal service providers can also develop their business and the association as a whole can diversify its competences and provide better quality services to a diverse range of clients.

Service provider associations – Bangladesh

The Sustainable Access to Agroforestry Knowledge, Technology and Information (SAAKTI) project in Bangladesh, formed 42 Service Provider Associations (SPAs) at the Upazila level (subdistrict), representing around 1 400 local service providers. The SPAs have a role in assessing the capacity of their members to increase their professionalism and develop links with local coordination platforms of line agencies to access information on technical and managerial innovations. The SPAs have gone on to develop rural information and resource centres for the community where quality inputs and services are provided. As with any organization the scope of services provided and their functions are constantly changing in line with client demands. After consolidating their linkages with line agencies, the SPAs in Bangladesh expanded their business with the large and medium-sized private sector constituting an important step towards the associations' sustainability. One SPA signed a contract with a local seed company to produce quality rice seeds as an income-generating activity with a commitment to provide quality seeds to growers. Another SPA set up a joint venture business activity with two companies – an organic fertilizer company and a seed company – that include the provision of training/extension support and the establishment of field demonstrations together with potential growers. The SPAs have also been instrumental in expanding the scope of services offered to rural clients by attracting other informal service providers (lead farmers, traders, dealers) to join the association. This creates a win-win situation, where the informal service providers develop their business and the association as a whole diversifies its competences. The SPAs have become a real driving force, able to influence line agency experts, to attract large private sector companies and to sell services (training and demonstrations) to other organizations. All of these efforts benefit poor producers as they provide easier access to quality inputs and useful advice. The information sharing platform set up by SPAs is also a useful resource to identify the real needs of producers and to create a sustainable and dynamic environment.

Regional resource pools

The concept of Regional Resource Pool (RRP) to provide backstopping support in MOAS was introduced in the SAAKTI project in Bangladesh. The main role and mandate of the RRP is to develop and update the capacity of the local service providers on a regular basis. The pool consists of line agencies from various departments that act as an informal network of experts. As the model developed the private sector also supported the pool. The concept is similar to the ATMA model introduced with World Bank funding in India. The objectives of the resource pool support are to:

- Promote an informal pool of line experts (both line agencies and private sector) who are qualified and capable of training local service providers on a regular basis;
- Establish a sustainable backstopping mechanism for the capacity building of local service provides and their associations with up-to-date information and knowledge;
- Introduce technical innovations made by line agencies and the private sector;
- Initiate and promote public-private linkages at the regional or block levels; and
- Develop formal and informal linkages among local services providers, their associations, line agencies and the private sector.

Under the Bangladesh scheme the pool of experts is used to provide training and technical support in response to the needs and demands of local service providers. The success of the model can be traced to the importance that the implementing agency – Intercooperation – gave to formalizing contracts with research and extension institutes and departments to provide technical back-up support to clients. The pool also makes use of NGOs to facilitate the linkages with public and private institutions. The system of advisory service support, enhanced by the RRP, has produced good results in terms of providing dynamic and technical support to local service providers and setting up a sustainable service provision system (informal communication with Intercooperation-Bangladesh).

Producer organizations and clusters

Producer organizations: As noted previously, MOAS can also be provided through membership associations. This has advantages as they are located close to small farmers and as such are likely to be better able to represent their interests. Seed producers in Nepal, vegetable growers in Bangladesh and paddy farmers in India have all been organized into producer organizations to increase production and market access. Some of these groups have also been effective in mobilizing donor assistance and accessing technical support and financial services for the benefit of their members. But usually producer organizations and informal farmer groups have limited capacity to maintain these services, even though some cost recovery can be generated by imposing membership fees. Usually these kinds of farmer groups and more formal organizations in Asia are not professionally managed and they commonly face difficulties in running the organizations as a business. The challenge facing producers is to create sustainable organizations as business enterprises with the potential to generate income and ensure financial sustainability.

The weaknesses are naturally more prevalent among small informal groups and organizations. Small farmers in rural areas are often unable to secure direct market linkages and/or take advantage of economies of scale when it comes to selling their produce. Business growth is often hampered by lack of access to finance and with few assets and savings their selling strategy is often short term and expedient. Most non-business producer organizations also have imperfect information, which puts them at a disadvantage with local traders and buyers.

The establishment of apex organizations of primary-level producers should, theoretically, mitigate some of these challenges by leveraging market demand and providing a stronger base for negotiating fair contracts. However, this is only likely to occur if sufficient time is given for the groups to mature and should only be promoted once primary organizations are relatively strong and functioning effectively. When combined with training, information and finance from support service providers, aggregate institutions of this type can exercise greater bargaining power on behalf of their constituents. This is particularly relevant among small farmers and underserved clients, due to gender, ethnic or other social barriers, located in remote rural areas, where markets are weak. Aggregation of production, processing or marketing activities into bigger economic units is a way of ensuring economies of scale and helps build a bridge between small-scale producers and the market. However, this requires organization and management capacity.

The record of producer groups as providers of MOAS is also mixed. Informal groups of farmers organized to disseminate improved technologies based on peer learning have been effective in extension delivery as witnessed by the proliferation of Farmer Field School programmes throughout the region. However, the evidence of creating apex organizations as advisory service providers has been slim. National-level farmer associations rarely have the capacity and political commitment to provide regular technical support to their members. Umbrella organizations of this kind tend to concentrate on advocacy rather than MOAS delivery. Membership organizations at the apex level all too often lack a clear vision regarding their role and are frequently dominated by the interests of the more influential members. These weaknesses have detracted significantly from their ability to be business-like in their ventures and to ensure longer-term sustainability.

Scheduling farm production

Producer organizations are playing a more active role in managing the supply of produce to local markets. The logistics involved are often complex requiring sophisticated management skills in organizing production. An innovative approach used in some projects is to divide producers into spatial clusters or zones and specify the days during which they could market their produce. This could be arranged on a rotational basis. A next step could be to access more distant markets in order to maintain production quantities. The challenge is for small-scale producers to manage their markets and secure good returns and this requires a high level of organization.

The Madhya Pradesh District Poverty Initiatives Project (MPDPIP) in India is an example of developing different levels of community organization to promote MOAS. The project was designed to build up small SHGs comprising a minimum of five members (called Common Interest Groups) and strengthening their capacity to form higher level aggregations and networks. The groups are brought together through the project under an umbrella federation to provide members with strength of voice in negotiating and collective bargaining as well as economies of scale. The primary groups are aggregated to form Village Development Committees (VDCs) consisting of around 100 members at the village level with an executive body made up of group representatives. The VDC is given the task of linking groups to markets and financial sources. An innovation also lies in developing a cadre of Village Resource Persons (VRPs) some of whom are also responsible for market linkages. The next level of aggregation is the cluster, i.e. a group of 25 to 30 villages. The project as facilitator assists and guides the group and village organizations for self-development and aggregation at this higher level. The cluster-based institutional development approach has in the case of the MPDPIP extended to the formation of a viable business enterprise, registered as a *producers' company* under the appropriate legal framework. This will be described more fully later.

Another example of aggregation and effective business links is in Andhra Pradesh where there are initiatives to strengthen village organizations to capture more of the value chain by opening procurement centres that are owned and operated by their members. These centres provide an alternative to local traders by collecting, grading and transporting farmers' crops to markets. Another example is in Rajasthan, where dairy producers' Common Interest Groups (CIGs) have federated to link into the Rajasthan Cooperative Dairy Federation (RCDF). The RCDF is paid a facilitation fee charged by the project to the CIGs and in return members gain technical information, access to finance and outlets for the sale of their produce. Finally, in Sri Lanka, federations of village organizations facilitate direct linkages between producers and private companies and public agencies. Over 15 such partnerships have been forged thus far and many more are underway. One example is a major partnership in the dairy sector between the National Dairy Development Board and Cargils Ceylon, Ltd. and about US$8 million have been invested in processing facilities, chilling plants and storage facilities to upgrade the dairy sector.

Clusters

Horizontal cooperation and networking among producer groups and organizations is a widely recognized strategy for aggregating production and achieving economies of scale. While these linkages are commonly promoted through „top-down' and „bottom-up' processes there are other collaborative configurations that also merit consideration. A significant example is the formation of clusters, a concept which has been adopted from industrial development experiences. Clustering is regarded as a significant feature of the industrialization process in developing countries (Nadvi and Schmitz 1999). The approach is being tested for agriculture emphasizing the importance of the geographical proximity of producers to diffuse new technologies more easily among them. Clustering also provides attractive benefits for small-scale business-oriented farmers by concentrating MOAS within particular areas supplying these services to a close network of producers. The concentration of producers with similar goals and values in a geographical area and within localized productive systems is intended to lower transaction costs and thereby foster improved efficiency of market transactions

and greater productive flexibility (Beinabe and Sautier 2005). The existence of a tight network of relationships also creates a favourable background for collective action, with positive impacts on knowledge diffusion and innovation (Requier-Desjardins *et al.* 2003). Collective action through clustering is perceived as an endogenous „specific asset' that goes beyond the direct benefits of cost-sharing arrangements and agglomeration externalities (Requier-Desjardins *et al.* 2003).

Clustering is closely related to value chain development and is seen as a key strategy to help advance the agriculture sector of many countries. The cluster approach recognizes that agricultural value chain stakeholders are often more innovative and successful when they interact with supporting institutions and other actors in the supply chain. By promoting vertical and horizontal links between local farm enterprises in specific geographical locations, as well as supporting relationships with facilitating organizations, clustering promotes the provision of „bundles' of services and enhances access to markets and information. Clustering is likely to increase productivity, and facilitate diversification of the farming system to higher value-added production. Accordingly, central and local governments have discovered that clustering is „innovative' as a way of supporting farm enterprise diversification while linking smallholder farmers to agricultural value chains in a more efficient and sustainable manner.

Clusters of rural agro-enterprises can be found in Latin America but are less evident in Asia although there are examples of clusters in the Philippines, Thailand and India. In contrast to industrial clusters, agricultural clustering for small-scale agricultural production in Asia has been more difficult to accomplish. Agricultural clusters have tended to be informal with weaker linkages among stakeholders. They consequently face greater challenges in achieving a critical mass of farmers, service providers and businesses. Another way to interpret this is that clusters in Asia will require more external support.

NorminVeggies, the Philippines

This case in the Philippines involves the organization of small vegetable producers into producer groups that are ultimately aggregated into a producer association, the Northern Mindanao Vegetable Producers Association (NorminVeggies). The vegetable producer groups, after being organized, were encouraged to form horizontal clusters for collective marketing. The clusters provided a supply base to consolidate product volumes and variety and result in greater access for members to diversified and predictable markets. NGOs, in alliance with local government units, provided postharvest and marketing services to small farmers through partnership arrangements with the producers' association. Technical support was provided by GEM/USAID in partnership with the Department of Agriculture. The clustering strategy developed by the project followed eight sequential steps aimed at linking farmers to the market. The steps include: (i) site selection, partnership building and formation of a working group; (ii) product supply assessment and product selection; (iii) market chain study; (iv) cluster formation; (v) cluster plan formulation; (vi) test marketing; (vii) scaling up; and (viii) cluster strengthening.

The scheme required strong coordination by NorminVeggies of interrelated activities – production scheduling, postharvest requirements, logistics (land transport, seaport and airport operations), grower and buyer communication, invoicing, payment collection and sale remittances to the producers. A management team was formed to handle these various responsibilities, paid from market facilitation fees charged to producers for these forward integrated services. NorminVeggies in effect acts as a 'market facilitator' linking clusters of producers directly to buyers. The company is accountable for product quality and reliability and assuring producers of the prices they receive for produce sold. Via clustering, produce could be more easily traced to the farm and to specific growers. The system has proved to be attractive to agrifood companies in the Philippines, introducing mechanisms for quality control, quick responses to buyer feedback, and implementation of market innovations. The system, in short, aims at mitigating the risks faced by dispersed small producers in providing continuous supplies of raw material.

Uy (2010)

The field evidence also suggests that with farmer groups, clusters and federations there is considerable scope for the provision of services on a cost recovery basis. Aggregation results in lower cost of services per member. This is even more pronounced when the services lead to relatively quick and perceptible improvements in income and performance. In addition, the integration of clusters into social and local networks can also give producers flexibility while enhancing their original skills. As clustering has potential to facilitate learning by doing and learning by using it is also likely to promote the emergence of innovations. Thus by sharing the same regional identity and building on local social capital, clusters, can under some conditions generate economies of scale, minimize transaction costs and trigger collective action, resulting in more sustainable market access for small-scale producers.

Producer companies

In order to provide sustainable services along a geographically-spread value chain, some stakeholders have set-up private commercial shareholder companies to provide a full range of necessary services. The overall objective of these business concerns is to provide small-scale farmers with improved access to new agricultural technology, markets, financial and non-financial information and a bridge to grow and diversify their businesses through developing forward and backward linkages. The company could make contracts with farmers to provide advice, training and inputs. It could also support innovations in processing, and take on other aspects of marketing the produce, such as linkages and negotiations with buyers, packaging, transport and payment.

An example is the Producer Companies (PCs) that have been formed through the Madhya Pradesh project in India, which are a hybrid of a private limited company and a cooperative society. They are democratically controlled enterprises owned by the community. While all members have voting rights the PCs are managed by professionals as profit-making concerns. In some cases they can also act as dealerships for private companies to supply agricultural inputs to member farmers. This arrangement brings a cost advantage by eliminating trader margins and providing quality assurance and timely availability of farming products. In addition to agricultural supplies, these producer companies also provide knowledge and training to their members to increase productivity and income.

In the Madhya Pradesh project, farmers subscribe to the company by buying a fixed number of shares at a nominal value to build up the share capital of the company. A board of directors is selected by the shareholders and a chairperson is selected among them. The decision-making authority is entrusted with the board members. A chief executive officer is appointed by the board and is given operating responsibility for managing the company enterprise and developing the business. The company also employs a cadre of professionals and specialists in the areas of agricultural production, procurement, financial management, general administration, business development, marketing and sales who are also responsible for providing MOAS services and bridging the gap between the farmers and the company.

By aggregating agricultural produce and building volume, direct access to wholesale/corporate buyers is possible. This allows primary producers to circumvent the existing supply chain of small-scale brokers, local transporters, resellers and other intermediaries that currently extract excessive value from each transaction. The producer companies also actively compare buying prices and negotiate with wholesale buyers – exporters, processors, large retailers and large institutions. As aggregators, they attempt to create a win-win situation for the producers, as well as the buyers.

Contract farming

As mentioned earlier, contract farming links initiated by the private sector show distinct benefits to farmers, especially if they can be sustained and value generated is distributed equitably. There are, however, various models of contract farming based on collaboration between farmers and buyers with advisory services and training often embedded within commercial sales. An innovative contract farming scheme is the K-Farm Carambola Programme in Malaysia, which seeks a more integrated

relationship between farmers and buyers. K-Farm is a fruit export company that in the past was a leading commercial farming operation specializing in tropical fruit production. As it developed as an export producer of Carambola – a specialized exotic product – it recognized the need for volume to enhance the competitive position of the firm in the European export market. A concerted strategy was followed to develop the supply chain network for Carambola ensuring volume and quality whilst adhering to global GAP standards. The approach aims at integrating small individual farmers into the Carambola supply chain, thereby ensuring control of the quality of production, the safe management of pesticides and the provision of consistent and regular supplies of raw material. The scheme is ongoing and requires that farmers enter formal contractual arrangements with K-Farm. K-Farm represents the producers externally to upstream buyers. The company provides the growers with regular extension and training support and is responsible for the continuous monitoring of the farming activities. While contracts are used, the close relationship with the producers and the ongoing assistance strengthens the bond between both parties. There is mutual interest to maintain the relationship – the producers receive advisory support and secure export outlets whilst K-Farm can be assured of volume, quality and consistency of produce. Efforts have been made by K-Farm to increase the profit margins of farmers by reducing the costs of purchased inputs and securing premium prices. The attractive economic benefits attained were sufficient to integrate small producers into the supply chain. MOAS support provided to the producers was also an incentive for them to continue with the scheme. This included market price information, farm planning and management assistance, advice on quality and safety and the testing of new production technologies. While contract farming relations often suggest two separate value chain stakeholders engaged in a collaborative relationship, the more successful cases of interlocking linkages, as depicted by K-Farm, demonstrate the benefits of closer integration between the two.

K-Farm GAP programme, Malaysia

The programme was developed as a private sector initiative aimed at producing safe fruit of export quality and adhering to global GAP standards. The approach is to integrate small farmers into the K-Farm Carambola supply chain so that the farmers can control their production quality, control their pest management and cost, and manage the production volume to support the clients' demand regularly and consistently. The tools to make this happen started from simple recordings of daily farm activities to eventually producing a growers' manual for use by farmers. MOAS support is provided through a private sector extension unit consisting of a technical manager and specialized support staff. Farmers are given intensive training mainly in aspects of Carambola cultivation (pest life cycles, pesticides' chemical functions and the ecological balance) as well as some advice on marketing. The farmers are organized into extension groups and advice is provided through scheduled weekly farm visits by the technical staff as well as the organization of training workshops, farmer group visits to 'benchmark' farms and the production of extension materials and information. Recommended production plans are also prepared. Problems are prioritized by the farmers and on-farm trials and demonstrations are designed to test new practices. The signed contracts signed specify the market prices to be received, the payment schedule as well as quality specifications. A system of sanctions is also imposed where there is a lack of compliance. The scheme developed a strong system of linkages with input suppliers and market outlets. This is seen as instrumental in raising the quality of produce while selling it to the most attractive market outlet. The communication between K-Farm and the farmers is continuous and the forging of networks with research and other organizations is critical to the success of the scheme. As a result of the GAP programme, K-Farm has been able to sell export quality Carambola to Europe at premium prices, at a level of 30 percent above those of competitors. Substantial cost savings have been made with the introduction and replacement of a more effective pesticide control programme and efficient use of fertilizer – less input use and at a lower cost.

Another example of private sector-led advisory support is HJS Condiments Limited in Sri Lanka. The initiative began in 1988, with the creation of Sunfrost Ltd., a company producing and marketing gherkins and semi-processed pickles for export. Owing to the high labour costs of production the company decided to set up a contract farming scheme with small-scale farmers. This operated for over five years after which the company decided to form HJS Condiments to increase value addition by processing pickles and diversifying into other fruits and vegetables. The scheme works with over 8 000 outgrowers and the company provides extension advice, credit – in kind – and an assured market

outlet. The ratio of extension workers per farmer is one to a hundred, a manageable ratio, and each farmer is visited on average twice a week during the production season. Extension advice is provided free of charge with the costs recovered at the time of settlement when the products are delivered (Swanson and Rajalahti 2010).

There are many other examples of these emerging private-sector extension systems for labour-intensive, high-value crops being exported from countries such as India, Thailand and Viet Nam. In nearly all of these cases, the firm absorbs the cost of advisory services, because such services are essential in maintaining product quality and meeting international quality standards.

Commodity associations

Within the MOAS system commodity associations are playing an increasingly important role in the Asia region. They have developed as a forum for a wide range of interest groups related to a particular commodity. These associations have members consisting of farmers, traders, processors, distributors, exporters as well as suppliers of MOAS. In some associations government representatives may also be members. They have an important role to play in dealing with policy-level issues that hamper the development of the commodity value chain. In some cases they are involved in research and development, conducting trade negotiations, promotion and quality development and dealing with logistical problems. Although they also have a role in delivering MOAS services and market information, this is less commonly found.

Three Asia commodity associations were reviewed by Shepherd *et al.* (2009): the Nepal Poultry Entrepreneurs Forum (NPEF), Viet Nam Fruit Association (VINAFRUIT) and the Spice and Allied Products Producers' and Traders Association, Sri Lanka (SAPPTA). All of these associations provide value chain stakeholders with market information. VINAFRUIT updates members on a regular basis through e-mail with information on trade issues, government programmes and training courses. The association also acts as a focal point for overseas buyers who wish to contact Vietnamese suppliers. These associations also organize training courses and seminars. Most of the programmes are aimed at disseminating improved technologies and market-related information. In Nepal, NPEF works with the Chamber of Commerce, the Ministry of Agriculture and donors, and organizes periodically national poultry expos where technical and information materials are on display. VINAFRUIT organizes workshops on new technologies, GAP and certification standards. Other MOAS support includes arbitration, advice in negotiating contracts and information on quality and safety standards. The associations not only contribute to a greater understanding among the chain participants but also among the chain stakeholders and support service providers – advisory, commercial and financial services.

While commodity associations are becoming an important part of the value chain landscape the range of MOAS services provided directly to their members is limited both in scope and quality. This leaves considerable potential for commodity associations to play a more direct service provisory role in agribusiness development. This will, however, require increased funding – possibly through member dues – and professionalism of staff with local outreach. Capacity-building programmes need to be developed specifically for the needs of different members of the commodity associations and a system of training and extension embedded within their structures.

Networking, partnerships and stakeholder involvement

The case studies indicate that successful MOAS nearly always features (i) the generation of knowledge and information from various stakeholders, (ii) the availability of diverse services and (iii) stakeholder engagement and partnership that allow services to be provided and the knowledge to be used effectively. The shift among small farmers and other stakeholders towards higher value enterprises and value addition provides the incentives needed for bringing partners together and subsequently leads to innovativeness. However, the presence of market opportunities alone is insufficient to encourage collaboration and partnerships, especially when the market is inadequately

developed to provide incentives for change. Coordination mechanisms are essential for establishing networks when the market is not sufficiently developed to provide incentives to do so.

Partnerships and networking also need to be encouraged among stakeholders in order to develop knowledge systems. This calls for strengthened linkages and networking among farmers, service providers, training and research institutions, and other support services. Broad stakeholder involvement is increasingly being encouraged to include a broader range of service providers and to promote formal and informal learning from MOAS provision. Ultimately, it is important to place the obligation for satisfactory performance on the service providers and to promote the „demand-led' approach. Knowledge management is being assured through the organization of farmers into associations and the establishment of platforms for producers, the private sector, NGOs and the government. The role of setting up these platforms and facilitating networking relations is often given to NGOs but more recently has become part and parcel of a public sector service. In some projects this is provided by government extension workers as facilitators of change.

The study shows that farmers in Asia are moving into a number of different forms of stakeholder partnerships and joint ventures as elaborated below:

Joint venture arrangements: Joint ventures are often set up among farmers organized into cooperatives and agribusiness companies. These schemes take on a number of forms depending on the type of product produced, its gestation period and the level of vertical integration. For single commodities, as previously seen, contract growing arrangements are often adequate, but for a range of products joint ventures are often used. Joint venture arrangements have been seen to be more appropriate for products with a longer gestation period and can occur both at the downstream level of the supply chain – grading, processing and marketing – or alternatively at the stage of primary production. The joint venture and subcontracting arrangements are not only developed directly between the public and private sectors but often with the involvement of third party players – 'generalist' development agencies and specialist MOAS providers.

Vertical coordination and integration: Vertical coordination involves organizing economic activity in a way that harmonizes the various stages of production, processing and distribution throughout the supply chain. Vertical coordination often includes strategic alliances – agreements mutually entered into by two independent firms – to serve a strategic objective. There are cases of outgrower schemes that include both formal written contracts and informal trust-based relationships. These contracts can take the form of market-specific contracts such as an agreement to buy a seller's output; production management contracts where the buyer participates in production management through inspecting production processes and specifying input usage; and resource-providing contracts where the buyer supervises production and supplies key inputs – the buyer owns the product and the seller is paid by volume. In contrast vertical integration is characterized by full ownership of the various stages of production, processing and distribution throughout the supply chain. MOAS services are increasingly facilitating a coordination role. In cases where coordination is required between private sector bodies, for example, producers and agroprocessors, cost recovery is often embedded through the sale of final produce. Where coordination is conducted between public and private sector bodies, the costs are usually borne by the public sector.

Local-level partnerships: Partnerships are also being formed at the local level among the private sector, the government and donors. In many contexts, there is an increasing need to organize the informal private sector – which consists of traders, input dealers and intermediaries – to participate in a platform for dialogue and information exchange. This forum, as we have seen from the ATMA experience provides smallholders and the more vulnerable producers with the political voice that they need in order to be heard. Through such mechanisms, donor and public agencies work together and with local government as partners in market development. The success of this initiative, however, is hampered at the local level by lack of capacity to identify, select and work with private business service providers. This process needs to be strengthened in specific locations and may require donor support to create viable service markets.

Platforms and forums: Given that the producer group concept is now becoming institutionalized at local levels, farmers are increasingly coming together into broad stakeholder platforms, often organized by decentralized offices. These platforms and forums are vital for face-to-face dialogue, trust building and collaboration among value chain stakeholders. They are invaluable to conduct negotiations, create a common understanding, vision and goals among the different stakeholders and balance competitiveness and collaboration. Meetings could be arranged on a subsector, commodity basis with the presence of government representatives, chambers of commerce, private businesses and NGOs.

MOAS initiatives that seek to develop partnerships need to reflect carefully on the most effective ways to accomplish this. Stakeholder coordination can be promoted by identifying the supporting roles of all actors and efficiently shaping their relationships and links. Negotiations between representatives of public and private bodies are central elements of this process. Meetings could be arranged on a subsector, commodity basis with the presence of government representatives, chambers of commerce, private businesses and NGOs. External non-partisan steering committees could also be formed, with representatives from different interest groups along the supply chain. These committees would be required to agree on development priorities and derive an agenda for MOAS provision based on these priorities. This implies that the governance of stakeholder partnerships might best be placed outside the partner organizations, and that the success of these partnerships may hinge on the development of appropriate forums for consultation and negotiation. Governments seeking to use public-private partnerships as a tool for the provision of MOAS need to reflect carefully on the most effective design of these bodies.

Capacity building: a holistic approach

The case studies show that training amongst primary producers in marketing, business management and crop and livestock production is more common. In contrast, training in postproduction practices, record keeping and product development are more specialized and less common. Farmers are aware of the need to upgrade their marketing skills and ensure that premium prices can be obtained, along with suitable inputs at a reasonable cost. The demand for such training does exist. However, training programmes of this kind are not often appreciated by public sector agencies and donors and although a demand may exist clients are reluctant to pay for such training rendered. Training tends to be perceived as a „black hole' consuming resources and infrequently offering evidence of impact. Some of the criticism lies in the not so apparent connection between training, skills development and impact. The study also delved into the content of training suggesting that often the failure lies in the design and organization. Many of the training courses offered were too general (relying on standardized material), theoretical and supply-driven. Moreover, the quality of trainers and the training delivery was also weak. Training tended to be treated as a one-time activity with inadequate follow up.

Some of the lessons learned from the training programmes are summarized below.

Promoting a capacity development strategy: „Good practices' suggest that there are considerable benefits from developing a comprehensive strategy that builds capacity at national, meso and individual levels as part of a capacity development programme. Capacity building should cover all relevant sectors and concern multiple actors along specific value chains. This translates into a need to build capacity especially in postproduction, business and marketing for both MOAS providers and their clients. This, in turn, will require developing in-house training capacity and providing appropriate training materials. The training should be earmarked not only for MOAS service providers and producers but also include policy-makers, programme managers, public sector subject matter specialists and extension staff, other types of MOAS support (NGOs and the private sector), rural entrepreneurs and other stakeholders.

Farmer-to-farmer learning: Among the most effective training programmes have been those based on peer learning. This was observed to take two main forms: (i) farmers identifying their own

problems and ways of resolving them (farmer field schools and business schools) and (ii) identification and recruitment of successful farmers to conduct peer-level training themselves (success case replication).

Mentoring, coaching and back-up services: The evidence also demonstrates that skills development should not be provided as a single one-off activity. Support is needed on a continuous basis when linking farmers to markets. This requires the design of programmes that provide close follow-up and mentoring/ counseling support. The service providers themselves may also need continuous back-up support to help build, maintain and update the capacity of the target groups.

Combining training with material support: Project experience suggests the need to combine training with the provision of material support. An example is the provision of credit to finance producers and service providers in establishing business enterprises in the aftermath of training received. In India, a programme has been developed to train young graduates in agri-entrepreneurship and on completion of the training programme, set them up in agriclinic or agribusiness centres. On completion of the start-up training provided by the government, graduates are eligible to apply for special start-up loans to establish a business enterprise that is expected to be profitable and provide a regular source of income. Revenues are generated from the sale of commercial inputs and charges made for the provision of advisory services on technical, marketing and management issues. The programme was launched by the Ministry of Agriculture in association with the National Bank for Agriculture and Rural Development (NABARD).

Agripreneurship training programme

This is a Government of India (GOI)-sponsored scheme aimed at (i) supplementing public extension efforts; (ii) providing specialized extension services; and (iii) creating self-employment opportunities for unemployed agriculture graduates. Under the scheme it was proposed to provide free training to unemployed agriculture graduates for a period of two months in agripreneurship development. In addition to the training, the programme proposed to set up 25 000 agriclinics and agribusiness centres over a five-year plan. Trained graduates would be eligible to take a loan and establish service centres to provide information-based extension services to farmers on a payment basis. The initial training exposed participants to a range of possible agriventures (plant protection services, maintenance and repairs, seed-processing units, ventures aimed at the production of critical inputs, technology kiosks, extension service consultancy and value-adding activities among others). The participants would be trained in setting up the selected venture, conduct a market appraisal, prepare a business plan and negotiate financial assistance from NABARD.

The process of building up a demand for agripreneur advisory services included enhancing awareness that the service provider is available around the clock and can advise on all topics including new technologies and products in the private sector. Following the training the service provider receives GOI certification and is in a good position to serve farmers. The training methodology has four phases:

Phase I: Participants are exposed to all possible agriventures by considering local conditions.
Phase II: Graduates select a single or group of enterprises relevant to the conditions in their locality and conduct a market survey.
Phase III: Graduates write their own bankable project based on the market survey.
Phase IV: Mentoring and the provision of technical and management support to graduates during the initial stage of implementation (one year). During this phase nodal officers are expected to assist the trained agripreneurs in the field to set up agriclinics and agribusiness centres.

Chandra-Shekara (2005)

5. RECOMMENDATIONS

A systems approach to MOAS

Systems support

The findings from this study show increasing recognition of the need for a more systemic, market-oriented approach to development that takes into account the policy and institutional environment within which all stakeholders operate. The premise here is that stand-alone MOAS interventions are insufficient to create sustainable and functioning markets over the long term. By broadening the focus of MOAS to a systems level, the overlap between different fields of activity can be more easily recognized – as can the need for better interaction between them. MOAS interventions, moreover, call for the support of both private and public sector as service providers and value chain stakeholders. The network of linkages (with input suppliers, agroprocessors, traders, exporters, government institutions, parastatal organizations and informal service providers) needs to be understood, not only for the development of agricultural production but the market relationships and structures that make up the value chain and provide support services.

The systemic approach is useful in understanding the complexity of the support service system. This includes the type of services provided, the actors/bodies in the service system, the functional relationships within the system, the level and scope of services and the governance conditions. Within this systemic framework, different types of relationships between actors – both as service providers and consumers – can be found. Commercial service providers usually compete in providing goods and services for a market. However, there are also private service providers that coordinate and cooperate among themselves, particularly after recognizing the potential benefits that can be generated by being part of a value chain. There is also a strong symbiotic relationship between service providers and users. Governance is another functional relationship that needs to be taken into account in the MOAS system. In the same way that past efforts of technology transfer were doomed to failure without paying due attention to the market, MOAS will have little impact if the rest of the value chain is not supported and functioning well. MOAS providers, whether they are public, private or NGOs need to be able to identify chain constraints faced both by farmers and other stakeholders and advise policy-makers on ways of resolving them.

Stakeholder involvement

Understanding MOAS as a system that includes multiple stakeholders suggests that actions are needed to encourage broad stakeholder involvement that includes all advisory service providers and consumers. This is also important to promote learning – both formal and informal – of the dynamics and challenges of extension and the provision of other support services. More and clearer thinking is needed on how to address multistakeholder interests with the MOAS system. This requires that good understanding is reached of the different mandates of MOAS organizations and the need to be aligned with national development aspirations. This entails consultation and strategic planning among multiple stakeholders and ministries and could also involve connecting formal agricultural education institutions, in-service training programmes and informal training and development programmes, linking them into the MOAS system.

In order to promote the systems thinking it is imperative that service providers are supported by the government to develop their capacities to undertake this broader advisory service role for pursuit in the future. In order to translate this into something meaningful, a coordinated and structured approach to the building of national capacity for market-driven production is needed to ultimately ensure that all existing and potential farmers and rural entrepreneurs requiring MOAS support have access to it.

Understanding the enabling environment for MOAS

The case studies show how the enabling environment for business is an important promoter of private sector activity and enterprise development. The legal and regulatory frameworks that define rules and determine rights and obligations with respect to resources, assets and business operations are particularly important. MOAS stakeholders often require legal recourse when dealing with contracts, product certification, branding of quality and safe products. The enabling environment for business is also a catalyst for change and innovation by encouraging private sector investment. The concept of the enabling business environment, however, is defined loosely and too often among policy-makers is understood inadequately. Policy-makers need a clearer understanding of the distinction between a business environment that enables private sector development in general to occur and one that promotes small enterprise development. Most of the businesses that benefit from privatization seem to be large scale. Small farmers and rural enterprises are often defined as micro and small enterprises and by definition are smaller, less-capital endowed and with lower levels of management competency. Small farmers and entrepreneurs are also more vulnerable than larger businesses to the biases and constraints that exist in the business environment and this reduces their competitiveness and inhibits their contribution to the national development goals of their countries. These enterprises have particular concerns that need to be addressed in the business environment and it is important that reform measures also respond to their needs and priorities.

Another distinction that needs to be understood is a business environment that encourages the production of goods and one that develops the provision of services. MOAS involves both the service provider and the consumer and both are concerned with making profitable investments and ensuring financially sustainable businesses. Policy-makers need to recognize the differences between the needs of private businesses set up to provide advisory services to value chain actors and the business of the clients themselves. Incentives may be needed in both spheres. By recognizing the distinction between the nature of the different actors that make up the market-oriented environment, the government should provide assistance in a more strategic manner, expanding the number of service providers to ensure greater competition and ensuring that microenterprises are dynamic and competitive. More emphasis could also be given to developing the informal private sector by finding incentives to bring it into the formal economy and looking at state assistance to address its concerns. These goals are often achieved through different means.

A targeted set of enabling policies is needed, depending on the client. The business policy landscape should be surveyed and mapped out and policy interventions prioritized to focus immediate attention on those aspects of the system that directly impede performance and have prospects of change. For farmers and entrepreneurs actions may be needed to simplify registration formalities of organizing them into producer groups. In contrast, service-oriented entrepreneurs need to know the implications of governmental regulations related to business service provision.

Besides paying attention to policies, regulations and laws, attention also needs to be given to strengthening the institutional business environment. This is often a prerequisite to ensure that new policies and regulations are implemented and enforced in a transparent, equitable and market-oriented manner. Institutional changes also needed to make sure that farmers and rural entrepreneurs are properly represented in policy and legislative reform dialogues. Representative institutions should advocate for change in a consistent and knowledgeable manner that is driven by mandates that come from farmers and entrepreneurs.

Policy-makers should better understand the potential role that the private sector can play in promoting business rather than regarding it suspiciously. Unfortunately many public sector decision-makers even now see the private sector as being inherently exploitive. Among the public sector are donor agencies that similarly have little understanding of the mechanisms needed to promote private sector development, notwithstanding their inability to understand the role of the enabling business environment. Development agencies, when they do attempt to develop market-related support services, directly finance service provision and as a matter of policy this is contradictory and has

proven to be financially unsustainable. The prospects for an emphasis on MOAS require attitudinal changes within the public sector in order for market-driven approaches to take hold in a sustainable way. Hand in hand with a change in attitude, the government needs to proactively lead processes of change by organizing consultations with the private sector and those organizations linked to it. This would be most useful to identify and address concerns about policy matters as well as the legal and institutional framework. Appropriate mechanisms for multistakeholder consultations need to be found.

Reinvigorate the public sector

Public sector investment in extension

While the role of the private sector in MOAS is increasingly recognized and respected, we have still seen the need for public investment. In contrast to the private good role of private sector business service providers, public sector extension is required to support small farmers and the most vulnerable rural households in locations where private sector investment is discouraged by risks and uncertain revenue flows and profits. These investments can be justified especially by working in areas where there are market failures. This is not to say that there is no role for public sector investment in extension services in areas with high market potential, but in order to utilize investments efficiently the focus of the public sector should be placed on filling gaps in service provision. An example might be to develop the capacity of private service providers or provide special services to enhance the market access of the most vulnerable. These investments should meet public priorities and not replicate investments that the private sector is likely to make.

Public sector investment can also be used to ensure that MOAS is provided in a cost-effective manner. This often requires policy-level changes and a commitment to reform. Public sector institutions and in particular research and extension often require structural and functional realignment. This is a considerable investment but there are examples where such reforms have succeeded to a substantial extent and have proved worthwhile. Public administration reform and decentralization processes often provide good entry points to redefine the roles, responsibilities and incentive structures of these agencies. For public sector investments, aligning strategies and policies with budgets is also important to avoid underinvestment and the misuse of investment resources. While donor funding can contribute to these requirements, increasing the domestic revenue base and improving budget planning and management should be recognized as national responsibilities.

Extension service reform

Together with a commitment to additional public sector investment comes an understanding of the areas of investment that can produce the most lucrative and rapid returns. Extension service reform has been identified as one area that can make a large impact if it is accompanied by structural reform and efforts are made to make the extension service more effective and efficient. Extension services have often invested much time and money in setting up and maintaining the system rather than in the delivery of actual services. Public sector extension is largely underfunded and underequipped and given multiple responsibilities, so it is often ineffective. A better understanding of the management of extension services and their weaknesses and constraints is a crucial prerequisite to create an effective and efficient service delivery organization. Changes are needed in the numbers of extension staff, their technical background and skills and competencies. New incentive systems are required within a more structured better performing management system that ensures stronger performance at the field level. The creation or strengthening of multidisciplinary subject matter specialist teams including extension workers trained in MOAS as part of a shift towards decentralization of extension services as found in Indonesia and the Philippines are examples of the kind of changes required. Formal advisory committees or governing boards, including representative farmers and women farmers, could be established at the district and subdistrict levels to work with extension staff in planning market-extension programmes, setting priorities and assessing progress on a regular basis. These management processes should also include venues for collaboration with private and NGO bodies and improved communication with management and other stakeholders at all levels.

Key to the effectiveness of these reforms is finance. Public sector funding has largely been too short term and without adequate attention given to recurrent budgetary allocations. Adequate operational and programme funds must be made available so that the field staff can implement MOAS programmes effectively. In the short term at least, greater flexibility in the allocation of public funds to support recurrent expenditures is necessary to avoid the loss of staff and morale which could cause long-term damage to the capacity of the extension organization let alone its renewed mandate. Parallel to this, efforts are needed to improve revenue generation, particularly at decentralized levels. As we have previously seen, there is potential to mobilize funding by engaging with the private sector in delivering MOAS and also making local governments more responsible for raising revenues. Care, however, is needed to ensure that taxes and fees are not imposed on smallholder farmers indiscriminately and consequently burdening them. Improving the fiscal capacity of extension services may require revenue-sharing funds from better-off to poorer regions, and co-financing funds to favour specific investments or groups, such as the very poor. Involvement of the private sector in providing MOAS would be another form of cost sharing. Competitive bidding for extension contracts would produce gains in efficiency, particularly where there is a well-developed and competitive private sector and public sector capacity to manage and monitor. Private sector collaboration, cost sharing and competition represent a potentially highly effective way of financing MOAS and should be encouraged.

Finally, instead of perpetuating the bureaucracy in MOAS some consideration should be given to the design and implementation of extension programmes that have precise goals and a fixed duration. In other words, extension could be organized as an ‚adhocracy' rather than a bureaucracy, and could be judged on its medium-term impact rather than long-term persistence. In all of these models service delivery will need to be closely monitored and information disseminated and fed back to clients. The availability of such information will contribute to making more informed and better decisions by policy-makers, programme managers, service providers and MOAS clients.

Extension workers' skills and roles

The orientation of extension staff towards the market and the need to develop both specialized and general skills and competencies in market-oriented advice requires a refocus of the personnel requirements and the establishment of new posts such as postharvest management, quality and safety, farm business management and marketing. A key to these changes is that field extension staff should shift from being „technical advisers' to more specialized teaching-learning facilitators or extension educators who can enable and assist groups of farmers to organize into producer groups and learn the necessary technical and management skills to produce specific high-value products or services appropriate to local market conditions. In this system, field staff members will have to be better qualified. In addition, they will require training in active teaching, learning and problem-solving methods, as well as how to organize producer groups and link them to markets through efficient value chains.

To the extent that chain development requires improved coordination among stakeholders and often requires contractual relations being formed, the role of the extension worker has changed to one of facilitation and brokerage. Sustainable linkages among value chain stakeholders can only occur if there is concerted action and mutual trust among the parties and the extension worker has a key role in developing this trust through creating partnerships and networking between stakeholders involved in the agricultural knowledge system and serving a facilitation role. Facilitation and brokerage activities of extension can bring together local actors in negotiating and building trust for sustainable use of resources. Extension can also help manage the conflicts that are likely to intensify in the wake of greater access to markets and relationships among stakeholders. These, however, are skills that are rare in advisory services today. NGO experience has shown that new skills in communication, dialogue and conflict management can be developed within extension organizations, but also that this has been difficult to maintain and scale up given prevailing human resource constraints.

Relations with research and policy-makers

Extension's role as a facilitator, broker, coach and even a partner in local platforms and value chains also represents an opportunity for a new relationship with research. Extension can provide a window for learning about rural change and innovation processes through dialogue among extension workers, farmers and other value chain actors about the relevance of different innovations on their livelihoods, the risks that arise in different farming systems, market preferences, power and gender aspects and myriad other factors that appear in processes of technological change and market development.

Policy decision-makers also need to learn about the effectiveness of extension for two reasons. The first is that analyses of how extension is performing can provide a deeper understanding about whether overall rural development policies and investment strategies are perceived by the ultimate target groups as being relevant to their situation and needs. If extension is failing or is rejected by male, female, young or old farmers, or by different ethnic groups, it may be an indicator that research is on the wrong track or that there are gaps in the wider service provision structures of which extension is just one element. Learning from extension should not lead to „shooting the messenger,' but should provide a reality check on rural development efforts more generally. Second, there is insufficient convincing knowledge and evidence about what constitutes effective extension systems. Many studies and evaluations have been done on the impacts of specific extension approaches, but in a wider perspective, policy-makers have seldom been sufficiently convinced about the value of extension services. There is currently an upswing in these investments, but to be sustained better evaluation is required to assess what these investments have achieved. This is more difficult than it sounds as clear attribution between extension inputs and development outcomes and impacts is difficult due to a range of factors that impact on results. For these reasons, more efforts are needed to develop evaluation approaches that reflect the pluralistic aims, concepts and structures outlined in this publication. Extension specialists, professional evaluators, researchers and decision-makers need to come together to consider how to learn from extension.

Providing effective services and information

There is also scope to develop more effectively the range of services that can be provided, the provision of services offered, the target clients and the information requirements. These are also crucial elements in improving the effectiveness and efficiency of services offered.

Supply and demand assessment

As a starting point policy-makers and programme managers running comprehensive MOAS systems need to solicit an assessment of the demand and supply of services. Such studies are required to identify constraints on the sustainable provision of MOAS. Assessments should include gathering information on the existing service providers and existing and potential clients. Indicators of performance could include the level of penetration (number of customers), the frequency of use of advice, the level of satisfaction of clients with services provided and the feasibility of service provision (how costs for the service might be covered). The study should map out the demand- and supply-side constraints and opportunities. Part of the support service assessment involves determining how the cost of the service will be covered. Interviews would be conducted with value chain stakeholders to enquire as to the sources of information to support their business enterprises, the type of information they require to strengthen the business venture and the benefits that they expect from their business.

Differential strategies

The case studies have shown that the vintage practice of delivering common technical extension messages to all farmers using a single extension methodology is being challenged and gradually replaced by client-focused approaches. This needs to be taken further and differential strategies that deal with each category of client group individually with their different extension needs – subsistence

farmers, commercial farmers, rural youth, women, rural poor, etc. – should be developed. This has given rise to terms like client-oriented extension and gender-sensitive extension.

While public sector extension has played an important role in addressing food security concerns among smallholder farmers at the lower end of value chains, as commercialization broadens and deepens, farmers and other value chain actors require more specialized and sophisticated support, which can usually be better provided by highly qualified private providers. For services higher up in the value chains, the competencies are very rarely found among the public service providers, and private providers become essential. These sources of services, however, are closely interlinked. While this differential focus suggests a clear demarcation between public and private sector investment in MOAS with respect to geography, target group and content of message, private sector development is often impeded by the lack of public sector support.

Differential strategies can go a stage further. A profiling of smallholder farmers for instance could be useful to strategize and focus MOAS support. Farm enterprises could be categorized according to their relative level of market orientation and organization, i.e. integration in the market. In any location it may be possible to identify groups of farmers and other rural actors that correspond to a typology as given in Table 2.

Table 2. Smallholder farming enterprises and MOAS support – a typology

Stage	Characteristics	MOAS support
1. Subsistence	Individual farmers producing predominantly for their own consumption, selling small surpluses to local markets. Precarious to non-existent access to extension and financial services and no use of purchased inputs. Low asset accumulation.	These farmers may require specialist intervention that can be considered as pre-enterprise oriented. Many agencies supply smallholder farmer communities with safety net support processes such as restocking assets after a social/natural shock. Advisory service support is more general in nature aimed at addressing livelihood concerns. Farmers often require financial support through microfinance schemes.
2. Market-oriented farmers	Small scale farmers/rural enterprises with low levels of value addition and weak business orientation. Access to services is incomplete and irregular, which limits growth prospects. Underdeveloped and weakly-linked markets.	Farmers at this stage are well positioned to benefit from market-oriented services and are often organized into interest groups (savings and credit organizations/SHGs etc.). These groups are largely informal and established at the primary level. These farmers demand support in the provision of short-term credit, access to local markets and supplies of local inputs. Extension advice in MOAS is often provided on a group basis and includes group management and linking farmers to markets. Service providers need to review their competence and staff profiles to ensure quality of MOAS.
3. Commercially-oriented farmers	Enterprises that have incorporated value adding, handling and/or transformation processes and product diversification. Selling into local, local, regional and national markets. Have access to	Farmers in this category will require specialist support in areas of enterprise growth. Farmers shift from informal groups to more formal structures – producer organizations – specializing in specific products and enterprises. Organic farming and fair trade are often value-adding activities that are attractive to farmers at

	appropriate services that permit enterprise growth. Reliable markets for goods and services.	this stage of development. Service providers and their interest group members should develop strategies that bring specifically-needed skills to bear. This may include such aspects as market information, local market access and linkages, finances, new product development, access to improved inputs, farm business management, quality and safety.
4. Modern commercially-oriented farmers	Farmer enterprises are fully integrated into modern value chains producing products that meet market demands in terms of quality and frequency of supply, both nationally and for export. Contracts are increasingly used and market entry requirements adhered to. Are capable of identifying and paying for required business development services.	These farmers will require support in areas of business management and are likely to be interested in risk capital ventures that will provide them with a proactive edge in the market place. MOAS support would be extended to cover quality and safety assurance, contracting and legal advice, production scheduling and business management. Cost recovery for MOAS is embedded in commercial and financial service support. Farmers are confronted with market entry requirements and shortages of longer term finance for enterprise growth. Agribusiness finance is a general constraint impacting on all value chain stakeholders. Farmers are more likely to form clusters and networks and develop formal and effective producer associations. Increasing use of ICTs to support enterprise development and growth.

In poor and more remote rural areas, it is likely that most farmers will be more subsistence oriented and at early stages of development. The closer to markets the more commercially minded farmers become, and the more specialized are the MOAS services on offer. Differential strategies could be formulated for specific target groups of farmers whilst also taking into account gender differences. The strategy could also differentiate spatially between the more remote rural areas and peri-urban locations in proximity to markets. This distinction would highlight the differences that are needed in the content of MOAS messages. For the initial categories the content of the message would place more emphasis on technical and general management issues and as focus is given to commercial farmers, MOAS would concentrate more on market access and development of the farm business.

ICT

The interest to develop ICT is well appreciated in the region but the potential, particularly for MOAS, has not been adequately recognized by policy-makers involved in agriculture. Expansion in the use of ICT will require investment in computer and electronic hardware as well as software, i.e. addressing the amount, quality and flow of information throughout the system. This needs to be conceived jointly with the hard infrastructure. The use of ICT to improve information on price and availability of inputs would represent a small but important extension of the more common emerging use of such technology to improve information on output prices and quantities. As mentioned previously more attention should be given to promote agribusiness development through the Internet combined with mobile phones and radio. Emphasis could be placed on developing software programmes to appraise markets, plan farm businesses and benchmark successful cases.

In short, a full range of ICT should be used in a concerted and integrated manner that includes mobile phones to improve technical and business information for farmers. Potentially, rewards for new approaches to ICT expansion are high as most Asian governments, for the time being, lack adequate human or financial resources to ramp up MOAS activities. Future research and programmatic activities could give high priority to research associated with experimental programmatic initiatives in this domain, conducted in collaboration with farmer and trader organizations and input dealers.

Besides the growing need for strong information technologies there is also potential to consider investment in communication centres. These centres, where used, have produced printed and online extension materials, conducted mass media activities (i.e. radio and TV programmes) as well as short messaging services (SMS-based information). In order to effectively expand ICT coverage and develop the necessary infrastructure, assistance is needed from both the public and private sectors. The public sector has a role to develop the capacity and skills of extension workers – private and public sector – farmers and rural entrepreneurs. Ways to expand outreach especially among smallholder farmers in remote villages and increase access at low costs also need to be found. Importantly ICT development requires strong links among national, regional and local organizations responsible for extension, as well as the involvement of credible individuals at these levels who can act as intermediaries or facilitators. Facilitators need to be knowledgeable about ICT, have the capability and support to maintain local ICT systems, be perceived as credible and trustworthy by local people and effective in providing training in the use of ICT devices. Finally, ICT also requires support for its diffusion within a national context to become fully effective and this rests in the hands of policy-level decision-makers. This will require considerable political commitment and financial support.

Non-conventional services

The findings demonstrate that while value chains are being developed, support services provided in the less conventional MOAS areas – quality and safety, certification, contract negotiation – require more attention. These services often cannot be provided by public extension services as they lack the capacity and competency to do so. Moreover, some of the support is of a private goods nature and can be supplied by private value chain stakeholders – traders, dealers and agribusiness companies. With respect to the quality and safety of fresh food, greater attention should be given to encourage collectors – the first stage in the chain process – to become GAP-certified. This could be a way of complementing the good practices implemented by certified farmers. But other value chain stakeholders also need to play their part. Regular meetings among value chain stakeholders are necessary to enable farmers to gain insight into buyers' quality and safety needs. Capacity-building programmes are also needed to educate farmers on quality and safety issues. In addition market authorities should also be encouraged to play a role in promoting the sale of certified quality and safe fresh produce higher up the marketing chain and ensure that sanitation and hygiene standards are maintained.

Bundling services

In the complex competitive environment that farmers and rural entrepreneurs face, advice is rarely demanded on a single topic or through a unique service. Decision-makers involved in market-oriented agriculture require advice on marketing, management as well as technical production areas. In practice there is a demand by farmers and rural entrepreneurs for „bundles' of MOAS services and information. The case studies also show that advisory service support alone is inadequate. Households and businesses demand combinations of advisory, commercial services and information in order to develop their businesses. The demand for services is often interrelated. For instance, there is a close interdependence between marketing and business advisory services and/or between finance and marketing. Many new market opportunities cannot be exploited without access to the financial resources required for purchasing equipment and raw materials and the strong synergy between the supply of credit and management skills often ensures that credit is effectively utilized. Moreover, the synergy between financial services and advisory services allows the cost of extension to be embedded in the charges for loan finance – a mechanism for cost recovery. If MOAS is to be promoted on a

commercial basis it would be useful to consider ways of complementing these advisory services with access to credit. Moreover, in order to expand outreach in credit provision and cover the costs involved, a broader range of advisory services has the potential to enhance clients' productive capacity. In short, a multifunctional continuum of service support is likely to be more effective than the promotion of a single service. It is recommended that decision-makers understand the need for comprehensive „bundles' of services that provide opportunities for synergies.

Notwithstanding this structural divide an issue that is common to both sectors is whether service providers should specialize in particular services or should provide a broad range of services within a single organization. Credit and MOAS are two very different functions that have traditionally been kept separate. From an organizational delivery perspective, there is considerable evidence to suggest that it is better to separate these functions within separate organizations even though there are complementarities among the services. However, the increasing interdependency of these services and others requires close synergy among service providers. This is not to say that service provision has to be maintained under a single umbrella of service delivery. One option is to provide MOAS to different value chain stakeholders through a broad range of service providers. Alternatively, some of the services could be provided for by the same organization but ensuring that separate units operate independently. In any event, close coordination is needed between separate service delivery units or organizations.

The integrated provision of support services can best be facilitated through the establishment of support centres – essentially a one-stop-shop concept that can address the firm's constraints in an orchestrated manner. These services include technical assistance on processing, packaging, transport, quality assurance and business management advisory services. Traditionally, such business centres were conceptualized and managed by development professionals and their sustainability was a matter of serious concern.

Service centres

Mahindra Smriddha, India: Mahindra & Mahindra has set up more than 100 centres and the number is expanding. Besides selling machinery, the centres provide market-related information to farmers, conduct demonstrations and provide soil- and water-testing services, knowledge updates on the weather, financing and agricultural counseling.

VISWAS, India's one-shop stop for retail agri-inputs and outlets: VISWAS provides consistent quality multibrand inputs at fair prices as well as guidance on technical aspects of agriculture, agroprocessing and market intelligence. VISWAS is being promoted by a group of companies with experience in manufacturing, marketing and extension of agricultural inputs. The group provides support services in the form of extension advice, input supply, research and development, and linkages to rural finance. It has led a discussion on pertinent topics of mutual interest, relating to agribusiness development, public-private partnerships and supply chains.

Service providers

The nature of the specific advisory services demanded by users influences the decision whether they are best supplied by the private, voluntary, or public sector. Depending on the nature of the service – whether it is a public or private good – this provides a first-step breakdown as to which body should be responsible for what type of service. The distinction between public and private goods divides service provision between the two sectors and within the public sector there are different institutions designated to provide specific services. Within the public sector extension service there are specialist subjects some of which are provided through a unified structure while others could be provided through different departments, sections, units, or public sector organizations. In the private sector as well there are specialist service providers and a commonly held view is that different advisory service needs are best fulfilled by different bodies. Notwithstanding this structural divide, an issue that is common to both sectors is whether service providers should specialize in particular services or should

provide a broad range of services within a single organization. Focused programmes covering a limited range of specialized services have been seen to result in better quality of services and a more effective delivery mechanism.

Private service providers often have to be induced to provide advisory services to a level of quality that satisfies client demands. Previously it was noted how donor funds have been used to develop local private sector service providers and in some cases this has also involved NGOs acting as Intermediary Support Organizations (ISOs) and playing an important facilitation role. This process requires scrutiny to ensure that ISOs have the capacity and skills to play an effective role. All too often insufficient attention is given to this critically important role. The choice of implementing partner needs to be carefully made to ensure that they have the relevant expertise and commitment in their chosen field of endeavour. They need to be willing to undertake contracted tasks themselves without contracting to others, and their operations must be open to public scrutiny. As such, it is important to identify relevant partners and assess their capacity to ensure effective implementation.

The development of a cadre of local service providers may require incentives in the form of grants or loans to set them up in business. The experience of agripreneurs in India and local service providers in Bangladesh illustrates the type of financial assistance needed and made available. Lessons learned suggest that more than a single service provider in any single area should be supported in order to create a competitive environment. Lessons also show that service providers often find it beneficial to refer clients to competitors or complementary service providers if demand requires. The potential mutual benefits of such collaboration are not always appreciated but the experience in establishing member associations for service providers highlights this potential beneficial impact. Just as farmers are commonly seen to collaborate and form member associations, there should be an interest among MOAS providers to associate among themselves to create a more powerful platform that addresses common concerns such as policy issues. The promotion of a competitive service-delivery landscape and the establishment of service-provider associations could be encouraged as part of policy.

Organizations, associations and networks

The evidence shows that building social capital is an important element in increasing farm income and generating rural employment opportunities. The benefits of collective action include reducing transaction costs in forging market and financial linkages while generating economies of scale. While these benefits appear to be attractive in developing market linkages, the findings suggest that it is not always necessary to place small producers into groups in order to enable them to participate profitably in value chains. However, a strong case can be made for farmers and other stakeholders to be organized so as to receive and offer market-oriented advisory services. Farmer field schools, SHGs and primary producer organizations are often crucial as recipients of extension advice by reducing transaction costs of extension delivery and creating an environment for peer learning and experiential methods. At a higher level of social organization (secondary or apex level) producers may come together as a cooperative or farmer association and as they develop may find themselves in a position to provide a more comprehensive range of MOAS services to their members at lower unit cost. Social capital formation that ensures the participation of members in decision-making is a vital prerequisite.

In providing MOAS services, the case studies involve two possible forms of social capital: bonding and bridging. The former is concerned with organizing producers into groups and organizations and creating horizontal networks. The latter is concerned with creating linkages with outside groups or organizations with the intention of adding value and generating wealth for its members. The role of farmer organizations and cooperatives at the secondary level for agricultural innovation is often necessary to avail production inputs and marketing. However, the performance of these secondary institutions requires that they are also set up in a participatory way and are professionally managed. Information provided to members needs to be readily available through processes that are transparent and accountable. MOAS has the task of raising awareness among farmers of the benefits and costs of organizing them into groups. They also have a key role in facilitating producer groups for different high-value crop and livestock products, so they can increase their access to both inputs and markets

for those enterprises. Once these farmer groups are organized and gain experience, they are likely to be more effective in articulating their needs for MOAS.

MOAS service providers also have a role in assisting farmers to get organized, determining their interests based on accessible market opportunities and working with them to develop value chains to market their produce. This requires developing the capacity of producer organizations in business management, marketing, finance, contracting and negotiating to name just a few services. The focus of attention should be placed on their leadership capacity to more effectively access markets and ultimately to better provide these very same services to their members. Although building social capital is not a necessary and sufficient condition to increase market access, its role in extension is undisputed.

Design 'smart incentives'

An issue that often occurs is the type of incentive that is needed to promote MOAS and how best to design it to achieve maximum impact and sustainable development. Where subsidies are provided a clear and logical policy needs to be set that aims at their *gradual* reduction and greater self-reliance in an effort to enhance sustainability. This is a long-term strategy that may often require concerted action within the public sector, between government agencies and donors. The aim is, of course, to wean out direct external assistance, especially by public sector (extension) or donor-funded bodies, ensuring that business enterprises are potentially viable and able to operate independently in the market. An issue is the timing and phasing of subsidies and the actions required for their ultimate termination. While incentives should be viewed as temporary there are many aspects that need to be better understood. Policy-makers need to ask a number of key questions. Should incentives take the form of direct subsidies? Should they be used as start-up capital to new MOAS suppliers? Should incentives be used to develop technologies and new products or should they be used to train and build the capacity of MOAS providers and clients? Incentive design needs to match the local situation: the needs of clients as well as the capacity of staff to implement them. When designing an incentive strategy, each option and combination of options must be considered in terms of its workability, efficiency and consistency.

The findings also suggest that the MOAS delivery should be regarded as a dynamic process depending on context and the stage of development of a particular country or region. Private sector development – of service providers and rural enterprises – is a process that requires improvement and upgrading over time. Time is necessary for enterprises to grow and to introduce innovative methods. Farmers and rural entrepreneurs, however, are reluctant or unable to pay for these services from the outset. The long-term economic development of value chains also needs support services often on a permanent or semi-permanent basis. However, where external promotion is involved through donor/project funding there is always a limited time horizon. Concomitantly there is the principle that any external service provision needs a clear exit strategy. There has to be a practical scenario at the end of external programme funding, anticipating and preparing the chain supporters who are expected to take over the support service function.

When developing commercial farming and rural enterprises an appropriate exit strategy is to establish an autonomous entity – a successful individual or a financially sustainable collective business enterprise. The responsibility for this lies with programmes, projects, or private service providers to facilitate direct linkages between farmers and private sector business entities. Critical to this is the forging of direct linkages with the market. This requires a reasoned assessment of the time necessary to establish strong linkages before exiting. Even so enterprises are still likely to require *repairs and maintenance* support involving leadership and management training and technical back-up support, sometimes for many more years. This implies that the time of exit is set by the circumstances of a situation rather than solely budgetary concerns. However, a general position can also be carved, that interventions which require a relatively short-term period of external intervention to create capacity – and which then appear to have a realistic chance of being sustainable – are likely to be a worthwhile investment.

Develop capacity

Human resources development

Capacity nationally is more than the sum of the capacity of individuals; it includes the capacity of organizations, networks and policy-makers. In short, a capacity development approach that is strategic and covers all stakeholders is integral to the MOAS system and critical for innovativeness. While capacity development support is largely led by the public sector, innovativeness within the system calls also for private sector engagement in supporting stakeholders along the value chain. Capacity building also needs to be comprehensive aimed at developing technical, entrepreneurial and managerial skills as well as providing knowledge and establishing partnerships, alliances and networks and linking them to different sources of knowledge and different areas of social and economic activity. Ultimately a capacity development approach should generate a knowledge-learning environment that is allied with supportive policies that create incentives and governance structures that are conducive for MOAS.

Human resource development plays a dominant role in this process and is vital for long-term sustainability. Awareness of MOAS among policy-makers is an integral part of this approach and sensitization and advocacy programmes should be designed and organized as needed. The nature of MOAS, as for any other technical area, calls for specialized knowledge and skills, understanding and attitudes: knowledge of technical subject matter in business management and marketing, practical skills in applying the concepts, tools and techniques for application in rural areas and skills in communicating and teaching farmers both individually and in groups. As such an effective MOAS system requires a cadre of professionals with a special skills mix. This in turn requires complementarities in technical support between extension workers, subject matter specialists, researchers, planners and policy-makers. Technical expertise in agronomy, livestock husbandry, postharvest handling and so forth needs to be complemented with functional expertise in marketing, farm and agribusiness management, contractual law, food quality and safety, rural institutions and rural finance.

As much of the training support is non-targeted, the reality has been largely a focus on men either individually or in groups. More attention clearly needs to be given to women who are actively involved in farming and value-adding activities. Women's entrepreneurship capacity has in particular considerable potential as in many countries in the Asia region it is the women who manage the household budget and deal with cash farming. The situation, however, varies culturally between countries. The development of women's entrepreneurial and managerial capacity in turn may require the development of a cadre of women service providers. This is particularly called for among the Islamic societies of South and Southeast Asia. While this conclusion is widely understood the political commitment among governments has been lacking. In many countries it is only through donor-funded lobbying that attention is given to women's business development.

New ways of developing human capacity are needed with attention given to the wide range of skills required to develop modern agricultural systems – technical, managerial, and entrepreneurial skills – combined with routines related to partnering, negotiating, building consensus and learning. Skills development in MOAS is vital not only for public sector staff but NGO and private sector service providers at all levels. Training and educational organizations must develop new curricula that foster the capacity to deal with complex challenges and permit greater specialization in skills and subject matter. Such training needs to be institutionalized by establishing new training centres with a mandate to train service providers and strengthening education centres with the role of producing new well-trained graduates for public service and the private sector. Investment is also required to provide a diverse range of back-up services for MOAS as part of the holistic approach to capacity development and innovation. Public sector extension programmes need to be backed by a body of professionals trained in similar subject areas who are qualified to diagnose business performance; identify farm and market problems and opportunities; develop objective and sustainable support; provide information for

more informed decision-making; and are able to communicate effectively with the various institutions and actors that support value chains.

Innovative ways of building local capacities should also be explored. This might include the development of new analytical techniques and methods of communication that deal with specific localized challenges. Evidence also suggests that training should be largely ‚experiential', practical and problem-oriented, simulating the reality of the situation of the entrepreneur as farmer and service provider. A curriculum-based extension approach such as the farmer field schools and business schools could be pursued. Clients should pay for such training as a matter of principle. In many situations, however, this will depend on the type of training offered, the type of clients demanding the training and their willingness to pay. Often, capacity-building training initiatives may have to be subsidized until a demand is created.

Private sector entrepreneurs can also be used as trainers where and when appropriate. Peer-to-peer training should be encouraged with a particular emphasis on identifying successful farmers and entrepreneurs who can draw on their life experiences and communicate lessons learned to others. Where farmers are linked to private sector buyers through contracts or mutual arrangements, the processes that convey the buyer demands for regular supplies of quality raw material to the primary producers are also a conduit of information on training needs. This is tantamount to developing training and extension programmes around private sector buyer demands. In an FAO project in Sri Lanka, this information flow was developed during the project design stage and where decentralized public-private sector platforms have been established, as with ATMA in India, this communication flow is in-built as part of the system.

Develop training materials and curricula

Investment is also needed in developing relevant and practical training materials for a diverse range of training programmes. Training and educational organizations need to invest in developing new curricula that foster the capacity to deal with complexity, change and multistakeholder processes and allow greater specialization in skills and subject matter. This kind of curriculum development will require a change in the institutional culture of many educational and training organizations. An appropriate balance is required between academic teaching and practical instruction – learning how to learn in real world situations. This will also require a balance between promoting individualism – as a way to encourage entrepreneurship – and the need for teamwork and collaboration.

There is also a need for universities, training colleges and vocational institutions to review and update the agricultural curriculum so that they better prepare graduates for a career in modern farming. Efforts should be placed on developing curricula in farm and agribusiness management, postharvest handling, marketing and agricultural processing given the need to prepare graduates for careers in both the public and private sectors. At the field level, extension materials need to be used in day-to-day extension activities and the materials produced must be demand-responsive and adapted to the needs of the different stakeholders located in varying development contexts.

Promote public-private partnerships

For MOAS to become mainstreamed and effective, interventions have to be viewed as integral to national policy frameworks and incorporated in national investment plans. A comprehensive public-private sector investment strategy would be particularly useful covering a range of fields including extension, research, education, legal and regulatory structures, financial services and infrastructure to promote business. Investment plans also need to be prepared. This may require taking into account the spatial distribution of farmers and value chain stakeholders, the nature of the market linkage (formal or informal), the length and competitiveness of the chain, the comparative advantage of the products produced and the varying capacity of MOAS providers. This information would be invaluable to make key decisions about whether to reform existing public sector structures or to use public resources to finance development of private providers of services.

It is now apparent that public and private sectors working alone cannot provide the required investment to deliver MOAS services effectively. In the Asia region there have been massive flows of private capital invested in the agribusiness sector and impacting on input and output markets. Multinational corporations are also expanding their reach globally and this trend is also affecting MOAS and cannot be ignored. While public sector investment with the private sector is being promoted more needs to be done to facilitate and engage the private sector and in particular in the delivery of support services. As demonstrated in this study there is a need for the public and private sector to work in partnership to realize the benefits of each sector's comparative advantage. In some cases partnership may have to be broadened to include NGOs and producer organizations.

In the realm of public policy there is also a need for stronger collaboration with the private sector; this is not a matter for the government alone. Specific strategies, programmes and interventions are needed to support the creation, improved coordination and upgrading of agricultural value chains to facilitate alliances between smallholders, small enterprises and larger agribusinesses and this requires strong private sector collaboration from the outset. Consequently, more attention needs to be given to promoting public-private partnerships as a practical way of combining both sources of funding to enable small-scale producers and other actors to integrate into profitable value chains.

The onus of responsibility is on the public sector to create the conditions for private sector investment. The ability of private service providers and business enterprises to compete depends very much on the availability and quality of the public goods (incentive structures, infrastructure and public services) and public „bads' (cost and disincentives of misguided interventions, poor governance). The private sector will only invest where infrastructure is established and the policy/legal/regulatory environment is conducive. If these basic needs are not met, there will be underinvestment by the private sector in MOAS support.

The forging of an effective public-private partnership is not likely to occur by itself and in each case there is a need to explore the range and types of potential partnership arrangements. Both sides increasingly recognize the potential benefits that can accrue but beyond this, effort and commitment are needed from both sides. In particular, ways need to be examined and tested in order to increase the quality and outreach of services. So-called, „kick-start' mechanisms to promote the transition of services from the state to the private sector – particularly in rural areas and where markets are weak – cannot be ruled out, and in some contexts may need to be actively promoted. The public sector also has to have the capacity to use its investment funds wisely and to monitor and supervise contracts with the private sector. Instruments need to be put in place to ensure that public tenders are fair and contracts with the private sector are monitored through transparent systems. These are the prerequisites to expand collaboration between the public and private sectors.

6. FINAL WORD

MOAS is part of an innovation system that includes other knowledge-based institutions from the public and private sectors as well as civil society. As such, MOAS has to respond to the needs of a broader range of actors – not just farmers – within product value chains. This requires outreach and linkages both horizontally among institutions and vertically among different levels of public administration and value chain stakeholders. In response to this systemic approach to development, MOAS needs to be extended in a range of different directions. The premise is that traditional agricultural extension activities are inadequate both in content and delivery. Extension has become more pluralistic with advice being provided from a wide range of public, private and NGO sources. The content of the advice, as we have seen, is changing and is becoming more market-oriented. An added dimension is the shifting role of the public and private sectors in providing MOAS support. As farming becomes more commercial more specialized technical assistance is required. The higher up the value chain one goes the more important the role of the private sector becomes. It is apparent that these services are rarely within the competencies of public sector extension. Another conclusion is that advisory services by themselves are inadequate and market-oriented farming and for that matter business development in general require the support of supplementary services of a more commercial and financial nature as well as infrastructure support and enabling policies.

The rapidly changing global environment, however, has become risk-laden with wide fluctuations in production (as a result of climate change) and market prices (as a result of globalization). MOAS has to understand the importance of helping farmers and other stakeholders cope with these risks whilst encouraging them to take advantage of new opportunities. Up-to-date information is needed on price and climate changes and extension workers have an important role to play in facilitating and brokering this information. Some farmers will need support to make changes to their farming systems and even plan a transition out of farming altogether in favour of seeking more sustainable livelihoods. Others will need advice on new technologies and market opportunities as ways to enhance their competitiveness and profitability. The linear model of technology transfer from research to extension and on to farmers has been replaced by a more dynamic system where human skills and capacity are essential to adapt the farm business to market and climatic changes. Extension agencies must transcend their image as „expert' providers of knowledge to the role of facilitators of information, discussions and advice regarding probabilities and trends where farmers, and other value chain actors, consider how best to manage the uncertainties they face.

We have seen that extension advice comprises both public and private goods and there are many tasks that fall into a grey area that lies in between. Investment resources need to be mobilized through both public and private sector channels. Among public sector policy-makers an important role is to determine how public investment should be used; whether it should be directed towards the public or private service providers – public, private, civil society and producer organizations – and in a way to ensure that they do not distort markets. This requires an assessment of their capacities and an appraisal of the costs, benefits, risks and financial implications involved. The relationship between policy, capacity development and investment is closely interwoven. Public sector policy-makers also require deeper understanding on how to achieve policy objectives with limited public resources and how to effectively utilize the combined investment resources mobilized. For MOAS to be effective in providing relevant services, public and private investment will be needed to fulfil these new roles.

For these changes to occur public sector extension services will need to revitalize themselves by creating new structures, positions and functions to ensure greater relevance and effectiveness. This will also require changes in incentive structures and the capacity and skills of extension workers in market-related areas of expertise. The focus of extension will also need to change from viewing the farmer as the sole client towards recognizing the need to support a broader range of stakeholders who participate in specific value chains. Farmer organizations have an increasingly important role to play in driving this process both as clients and potential suppliers of MOAS, and perhaps even taking over

the management of extension themselves. This new context for MOAS consists of new demands, opportunities and challenges characterized by uncertainty, unpredictability and uncontrollability.

While the systems approach is conceptually attractive, this requires a change of mindset among policy-makers and service providers. More appreciation is required of the dynamics of change in farming and the shift towards the market; the scope of the challenges and a recognition that this cannot be addressed solely through the public sector. It also requires a realization of the benefits that all MOAS providers can bear and an understanding of their competitive advantages. All actors in the MOAS system must recognize the potential mutual benefits from collaboration.

It has been suggested that a strategic programme framework for MOAS is needed that takes into account the rapid changes that are occurring and multistakeholder interests. Preparation of a framework will require broad stakeholder involvement that includes all advisory service providers as well as representatives of other public and private stakeholder bodies. The mandates of the diverse MOAS organizations and bodies will need to be aligned with the national development vision. This will require consultation among multiple stakeholders and ministries; a vital prerequisite to ensure that MOAS is promoted through partnership arrangements. The programme framework should map out the areas of investment opportunity while delineating public and private sector roles and opportunities for partnership. Given the comprehensive nature of strategic programmes of this kind, implementation is likely to be phased.

While the ‚big picture' appears attractive the reality is that interventions to date have been piecemeal and often of a pilot nature. However practical experience is being accumulated in providing market-oriented advice to farmers and other stakeholders, but while this is mounting, the findings of the study suggest that very little of the lessons learned are systematically captured and shared. Moreover, while some projects have shown positive short-term results, there have been very few cases of widespread and sustained scaling up and influence on policy decisions. Research on ‚good practices' in MOAS has been limited as reflected in the paucity of international forums for information exchange. With the growing interest in MOAS it seems essential that low-cost ways of exchanging experiences are sought. More attention also needs to be given on how these often fragmented experiences can best inform public policies on MOAS. Policy-makers especially need to understand better the issues tied up in MOAS and to receive credible guidance to make changes.

Part of the problem has been the absence of monitoring and evaluation (M&E) systems and lack of evaluations conducted. There has been very little comparative or *ex-post* evaluation of cases to determine whether the outcomes from MOAS innovations are economically feasible and can be replicated and sustained. As the implementation of MOAS programmes is based on complex processes at different levels, involving many stakeholders (farmers, institutions, public decision-makers, donors, etc), structures and mechanisms need to be developed in which the performance of the entire process of learning, adapting and reflecting is regularly reviewed and the activities, roles and relationships of different actors and their effectiveness are evaluated. Procedures also need to be put in place to monitor the impact of investments in MOAS and ensure that the findings are fed back into decision-making processes at all levels.

Given the importance placed on adopting the systems approach to service delivery, innovative designs of an M&E system are required that are comprehensive and include all stakeholders involved in MOAS delivery and demand. The M&E system is necessary to improve operations, ensure due diligence and accountability as well as to provide feedback to inform policy-makers and planners on funding and budgetary allocations. The system should also play special attention to the outcomes of training programmes and changes in skills sets and competencies of clients. Governments, development agencies, donors and the private sector should also be informed of the effect that their efforts are having, individually and in combination, at each level of the MOAS system be it macro, meso or micro.

The vision laid out in this publication for advisory systems in the future seems to be far beyond the capacity of all forms of service providers – private, public or civil society – at present. Achievement will depend on political commitment and an effort on the part of government to invest in education and training of service providers and receivers. This is vital if they are to cope effectively with the uncertainties and complexities of an increasingly globalized world. Upstream and downstream thinking needs to be better aligned and public investment made available. This investment in turn should feed in to the ability of the private sector to provide commensurate support. The role of the public sector is pivotal to draw the private sector in as an MOAS partner.

ANNEXES

Annex 1

SELECTED CASE STUDIES

1. Public sector-driven interventions

India – Agricultural Technology Management Agency (ATMA): ATMA is a district-level quasi-governmental organization that was established in 1998 with support from the World Bank. ATMA is a multistakeholder forum that encourages collaboration between government departments and other public sector institutions together with the private sector and NGOs, The mechanism operates as an autonomous entity under the direction and guidance of a Governing Board (GB) made up of heads of the line departments and research units within the district and stakeholder representatives – farmers, women and disadvantaged groups – and private sector firms within the district. Under the ATMA initiative, Farmer Interest Groups (FIGs) – enterprise-specific groups – are aggregated into farmers' associations at the district level and farmers' federations at the state level. These groups are supported through capacity-building training courses, exposure visits, demonstrations and on-farm and adaptive trials. The FIGs are trained in activities that include market-oriented production of crops and livestock, value addition and marketing. ATMA groups are supported by block-level Farm Information and Advisory Centers (FIACs), which provide them with production-related information and also help them with market-related information such as prices in different markets, both far and near, as they are equipped with computers and Internet connectivity by ATMA. A Directory of Buyers and Sellers of different crops/enterprises is also available, which helps the groups in taking decisions such as when and where to sell their produce along with sources of suppliers of different agri-inputs. The individual farmer and group members have to pay a small fee for using the FIAC services. ATMA helps farmer organizations develop partnerships between public-private-CSO-NGO sectors for supply of inputs as well as for procuring and processing agricultural produce and to train farmers. The focus is on empowering farmers by linking them with multiple sources of information, technologies and markets rather than providing subsidized inputs.

Sri Lanka – experience of the Small Farmers and Landless Credit Project (SFLCP). Financial and non-financial support to develop off-farm and non-farm income-generating activities: As part of a poverty reduction programme the project encouraged the promotion of income-generating activities. Under the programme equal importance was given to implementation of non-financial and financial support services concurrently to promote microenterprise development. The project was designed as a donor-funded initiative expected to develop self-supporting, private sector-led microenterprises that would continue to access financial and non-financial services through formal financing institutions and service providers. The project used the Group Lending Concept and Credit Plus Approach (i.e. credit plus support services) as its main strategy for achieving its objectives. Some NGOs were admitted as partner/facilitating bodies to assist in providing vocational, entrepreneurial and financial management skills for the rural poor. The NGOs supported the development of income-generating activities by directly providing services that include: training on group formation; training in entrepreneurship, and management, marketing support; preparation of bankable project proposals; and advisory services and information. The services provided under the programme were limited to very basic levels such as SHG formation, basic training on entrepreneurial skills and some advisory services and were not based on a direct fee. The services provided were part of a package of credit facilities granted to beneficiaries through a credit scheme. Services, such as training in technical skills, management capabilities, development of markets and products and information were very limited and furthermore service provision was a subsidized NGO approach. The very general nature of services scattered over many subsectors rendered enterprises supported under the programme uncompetitive. The programme introduced a combined approach of credit and business development service delivery as a package to support the development of rural non- and off-farm microenterprises. As a result of the support services provided,

many microentrepreneurs have emerged. However, there is scant evidence concerning the sustainability of the enterprises or the service providers. Nonetheless, numerous associations have been formed and it is envisaged that they will continue to facilitate access to both financial and non-financial services.

Sri Lanka – microfinance-linked rural enterprise development scheme by a private bank. Hatton National Bank's Gami Pubuduwa Scheme (GPS): The Hatton National Bank's Microfinance-linked Rural Enterprise Development Support Scheme or Gami Pubuduwa Scheme (GPS) is regarded as an interesting model of support to small business development. The bank was encouraged to provide financial services to target farmers and rural entrepreneurs together with a package of non-financial support services. The programme linked microentrepreneurs in villages to the financial supplier through a cadre of Village Development Advisors (VDAs) appointed by the bank. The main elements of the scheme comprised rural savings mobilization and promoting small businesses through a variety of services including credit facilities. The main role of the VDAs was to understand the needs of the villagers and provide them with the necessary technical advice to develop and implement bankable small businesses. VDAs identified the farmers/villagers who could be assisted to borrow and carry out small business. They also provided troubleshooting assistance and training to the entrepreneurs. Further, the VDAs assisted the village borrowers to ensure correct end use of funds, by assisting in purchasing the necessary equipment, raw materials, etc., required for the production process. They also assisted in obtaining external expert advice wherever necessary, particularly from field officers of the Agriculture Department, veterinary surgeons, extension workers and so forth. The VDAs were responsible for: (i) identifying potential farmers as clients of the bank; (ii) continuously monitoring the clients to ensure success with their business projects; (iii) providing or facilitating access to different services for enterprise growth; and (iv) monitoring all repayments of loans. The cost of the VDAs is included in the cost of the bank interventions as an embedded service and the clients pay the cost indirectly. Bank-paid advisors in the field are considered an effective mechanism for credit screening, loan usage and loan recovery. The beneficiaries are not willing to pay a private service provider when there is an indirect „free' service available. The programme was not subsidized by donor support and the commercial bank recovered the investment in VDAs through credit screening, lowered transaction costs and a lower default rate. As the cost of VDAs is embedded in the financial services costs, the sustainability of such interventions was also ensured to a large extent. However, the generalized nature of business development services offered by VDAs was not much appreciated or required by the enterprises. Furthermore, the impact of such services on enterprise performance was also dubious.

Sri Lanka – Export Production Villages (EPVs): In the 1980s Sri Lanka pioneered the establishment of villages specializing in production for export. The Export Production Villages (EPVs) scheme combined elements of an „export-linked village small-scale producer' scheme with those of grassroots participatory development. It was a comprehensive approach to rural export development, embracing production, marketing, financial intermediation and institutional development. It was based on the realization that there was a substantial potential for the development of exports from rural areas, provided that issues of production and export marketing were adequately addressed. The formation of the EPVs was carried out on a „product sector' basis covering fresh fruits and vegetables, pulses and oilseeds, coconut products and cashew. The support services to EPVs were provided through a variety of providers and facilitators. The conceptualization and linkages with enterprises and initial organization support was done through public sector institutions. They facilitated linkages with export-oriented enterprises and formal contracts were established between the producer and the exporting firm. A series of training programmes on various technical, management, packaging, quality assurance, export processing, accounting and marketing aspects was organized through private consultants and public sector specialized agencies. In many cases, services provided were subsidized by the public sector and specific technical and marketing services were embedded in the transactions with the exporting firm. The village producers signed a supply contract with the exporter and formed a company known as „Peoples Companies' in which producers had a profit-sharing arrangement. Various business development services were provided to the producers by private services and their cost was embedded into the purchase price of the product. Hence, the cost of

MOAS was indirectly paid for by the producers. The EPV model of linking producers with exporters offered an interesting model whereby private and public sector interactions facilitated the integration of primary producers into an export-linked business. However, heavy subsidies and political patronage restricted the sustainability and upscalability of this model.

Sri Lanka – outgrower system for supply development of cut flowers (*Anthurium*) for export by the northwestern province: An innovative enterprise-linked outgrower scheme that has been developed for production of new varieties of *Anthurium* flowers, calls for a partnership relationship of small-scale outgrowers, biotechnology laboratories, exporters, local government and a specialized public sector institution for export promotion – the Sri Lanka Export Development Board (SLEDB). The model is based on a system that includes a package of financial and non-financial services provided through private-sector service providers and public sector institutions. The exporter provides a variety of market-oriented services to farmers who are trained to produce the type of products needed for export. Farmers are provided with inputs, technical advice and training and are assured of a market. The scheme mobilizes service providers through both the exporting firm and the public sector extension service. Banks lend to farmers through the exporting firm rather than lending directly to farmers who often have difficulty in providing collateral. Arrangements are also made by the SLEDB and the local government institutions to provide extension advice and training for growers on a cost-sharing basis. Growers are assisted to form a growers' association linked with an exporter to buy the export-quality products. The initiative has created a market for input suppliers, specifically for the suppliers of planting materials.

Bangladesh – Livelihoods, Empowerment and Agroforestry (LEAF) project: The project, funded by the Swiss Government, was implemented from 2004 to 2007 in northwest Bangladesh focusing mainly on marginal farmers and the extreme poor (over 70 percent being women). Emphasis was given to the development of human and institutional capacities, largely in the agroforestry sector. The project had three focuses – marketing, livelihoods development and human and institutional development. A central theme was to develop and empower farmer organizations to prepare community plans and link to the market. The project developed the capacity of farmer groups to conduct market appraisals and developed a nine-stage community-driven market appraisal process. Women and other small-scale farmers sell their products individually at scale with weak capacity to bargain with local traders. The intention was to create a locally available cadre of market extension support with local service providers and lead farmers from partner NGOs and community-based organizations (CBOs) respectively. Local service providers were resource farmers selected by the community and trained by the project as marketing facilitators. These resource farmers provided services to community members on a fee-cost basis. The field facilitators and local service providers supported the development of CBOs and were given the task of linking farmers to traders. Farmers were consequently organized into groups and encouraged to market produce collectively. Farmer networks were also established to promote joint farmer action. In order to develop the capacity of CBOs, the project provided training to partner NGOs, who in turn provided on-the-job training to farmer groups. The marketing extension approach focused on developing skills and competencies in selecting market channels, negotiating with traders, analysing marketing costs, postharvest handling, grading and packaging and group marketing. The marketing extension strategy led to the development of small enterprises – run by the farmers – such as microbusinesses and group enterprises. The groups have diversified into providing their members with a broader portfolio of services including a saving/loans scheme, market information, joint procurement of inputs and the establishment of group management collection centres. The lessons learned suggested that the bottom-up approach of starting at the farmer level created better conditions to include women in the development process. The importance of capacity building was also highlighted, recognizing the need for skills' enhancement of group members. However, more attention needed to be paid to the quality of the services provided, especially for the poorest households and the development of business skills among vulnerable households. Although the benefits of the marketing extension approach were recognized and appreciated, it was regarded as insufficient for scaling up activities.

Bangladesh – KATALYST: vegetable production: The vegetable sector in Bangladesh plays an important role in the economy. The Department for International Development (DFID), the Swiss Agency for Development and Cooperation (SDC) and the Swedish International Development Cooperation Agency (SIDA) supported the implementation of this initiative as a pilot project, promoting the development of 25 subsectors and private sector business development service markets. Additional activities focused on the enabling environment for business and the establishment of business associations. The project was implemented by KATALYST through an innovative intervention that focused on training agricultural input retailers and developing „embedded information services' within the input supply chain. As part of the project strategy, KATALYST followed a market development approach to business services, which identified the main cause of low productivity as lack of knowledge and information. The findings showed that farmers were dissatisfied with the quality of the production and market information they received. Public sector providers of information were also regarded as largely irrelevant. The strategic challenge was identified as building the capacity of the private sector to strengthen existing relationships and offer them knowledge and information services. As a response, the project provided business services related to, *inter alia*, knowledge and information on market access, management and technical skills, quality issues and production methods. The business services were classified into three types: (i) transacted services with payments made directly in cash or kind; (ii) embedded services, referring to packaged or bundled services within commercial transactions in the value chain; and (iii) public benefit services, referring mainly to services provided by chambers or associations which have an effect beyond a single enterprise. Attention was placed on building the capacity of input retailers. Syngenta was identified as having a comparative advantage, as it was the market leader for a number of crop protection products in Bangladesh as well as being a substantial seed provider. The company was committed to staff training as a business strategy, perceiving this as a means of extending that philosophy to its retailer partners. As part of its wider corporate social responsibility and being aware of its public image, this was an opportunity to engage beyond „normal' business activities. KATALYST focused on the provision of generic services including, how to deal with customers, ethical business practices, how to select and use inputs appropriately, how to use pesticides safely, legal aspects on sale of inputs and cultivation practices for major crops. In contrast, Syngenta promoted the benefits of specific products – which product in different circumstances and how to use it. Thus the programme was located in the overlap between the wider public objectives of enhanced knowledge and information provision on vegetable cultivation and the narrow private objectives of selling Syngenta products. The programme also followed new innovations in training methodology and approach. Training was organized on a residential basis with retailers paying a small commitment fee. Evidence indicated that the project was successful in generating significant improvement in the flow of information and knowledge in the market. Knowledge and information services became an integral part of the vegetable input supply chain and this contributed positively to productivity.

Bhutan – Market Information System for farmers using IVR: Extension services in Bhutan are mainly public sector-driven and decentralized with a focus primarily on production-oriented advice. The project has been operating since 2009 and is funded by the Netherlands Government and is implemented by SNV. The market information project was designed to reorient the Bhutan extension service to provide a more market-focused approach and included promoting market development. The main clients are smallholder farmers (65 percent) and marginal farmers and the landless (25 percent). An important aspect of the project is the organization of farmers into self-help and producer groups, linking farmers to markets and providing market information. Market-matching platforms of producers and buyers are arranged and the producer groups are aggregated into apex bodies as a commodity association. A particularly important aspect of the project's design is the provision of Internet-based market information services – a Web site has been developed to act as a database throughout the kingdom. The ICT system at present, however, is limited in its outreach to media outlets, television and newspapers. In order to promote outreach a mobile voice-based phone management information system (MIS) has been introduced in four languages covering more than 80 percent of the country and its language groups. However, the information service is not adequate by itself and has to be complemented by farmer group formation, training of extension agents and farmers in marketing and postharvest handling and the development of market-oriented local infrastructure

(farm roads, produce collection centres, grading facilities). The project is pluralistic, supporting the development of public sector extension, private service providers and NGOs.

Nepal – Coffee Promotion Programme: The ongoing Coffee Promotion Programme is funded by the Swiss Government and implemented by Helvetas. The programme aims at improving livelihoods of smallholder farmers in coffee-producing regions and has adopted a value chain approach to increase farm incomes. It is working in the upland rainfed areas of the Middle Hills where there is considerable potential for coffee production and sales to both domestic and export markets. The target beneficiaries are resource-poor small farmers with special focus on women. The essence of the programme is to develop the capacity of public and private service providers as well as the NGO implementing partners. Within the public sector there are government departments and organizations responsible for provision of MOAS. The thrust of the programme has been to strengthen the coffee producer associations to disseminate new technologies and develop their skills to undertake business transactions to benefit their members. A network of Coffee Producers Associations has been developed, at the district level, supported by a cadre of Local Resource Persons (LRPs) – lead farmers – selected to facilitate technology dissemination through farmer-to-farmer learning. Private sector input dealers – Agrovets – play an important part in providing producers with improved inputs as well as advisory support. Public sector agencies also assist with organic certification and organizing trade fairs. Helvetas plays a direct role by supporting the commercial sales of coffee, providing technical assistance in processing and value adding, promoting GAP and ensuring that produce adheres to quality specification and traceability standards. Local NGOs are implementing partners with responsibility for organizing coffee producers, developing market linkages, negotiating contracts on behalf of the producers, assisting with organic certification and providing support in farm and agribusiness management and marketing. Backstopping services are provided by the programme to support NGO activities. Many of the MOAS services are offered to clients free of charge or subsidized by the programme – especially extension support for production and the training programmes. Commercial services, however, are provided at full cost often embedded in the prices received for produce sold. As the coffee producer groups aggregate to form an association they also have potential to provide advisory services to their members. They have been effective in organizing farmers as part of a network and promoting technology transfer between members. ICT is being used to promote MOAS and a Web site for buyers of coffee has been established. Producers, value chain actors and service providers demand market price information, advice on market channels, product development, equipment specification, packaging materials and production technologies. There is recognition that the scope of services provided, although broad, is inadequate and clients' demands for credit, research and development, crop insurance and systems to monitor quality standards are high. These services are unavailable because of limited human resources and deficiencies in the education and training system. The case is a good example of broad collaboration and points out the importance of assured markets prior to focus on production. Also the combination of commercial services – credit and marketing – in addition to advisory services as well as capacity building in production, processing and marketing have been crucial to the programme's current success. The lessons learned suggest that training by itself is inadequate and farmers often require financial and material assistance to allow them to practice what they have learned. Capacity-building support on a continuous basis – mentoring and coaching – has been invaluable in developing the ability to operate businesses independently. This is mirrored by the need to continue learning, exchange good practices and share experience. The private sector is crucial for addressing trade-related issues. As the range of value chain clients requires a broad package of MOAS support, collaboration between the public and private sector is vital.

Cambodia – village/commune-based private service delivery: This project was funded by the German Technical Agency for Cooperation (GTZ) and was implemented over four years up to 2008. The objective was to increase farm productivity among smallholder farmers through the provision of a range of services: research, extension, business development services, certification, organizational development and training. The demand for extension support in the country is high but most of the extension messages have been production-focused. Extension support has been coupled with the provision of a free input package of seeds and fertilizers for field demonstrations. Within the agriculture subcomponent the project focused on three major initiatives, namely: (i) the establishment

of a cadre of Village Animal Health Workers (VAHWs); (ii) the qualification of Farmer Promoters (village-based extension workers); and (iii) the establishment of organic rice production farmer groups. The thrust of the project was to develop a cadre of private service providers and organize farmers into specialized organic rice groups. Attention was placed not only on production but increasingly on the market. Farmers showed a considerable interest in receiving marketing information and advice on issues of product quality, certification and linking to export markets. The advisory services were mostly financed by the project, which made some headway in decentralizing the provision of agricultural services and began using private sector service providers – input dealers and traders. No systems were introduced for cost recovery of services provided given the culture of free input provision in the country. The project recognized the importance of the link to financial services for seasonal credit, particularly for smallholder farmers. A lesson learned was the need for a strong commitment and regular and intensive technical support along all parts of the organic rice value chain.

Thailand – Village Based Private Service Delivery Project: The Village Based Private Service Delivery Project has been operating over the last decade supported by the Royal Project Foundation set up by the King of Thailand. The project aims to improve the agricultural productivity and income of rural farm households in the poorest region – the remote highland areas of northern Thailand. The population is desperately poor and the social composition of the highland people is diverse comprising 13 ethnic groups that have a low literacy level. Smallholdings are scattered and during the rainy season many of the roads are impassable making semi-commercial farming a challenge. The project involves the collaboration of a number of public sector departments (land, irrigation, cooperatives and the agricultural bank) as well as the private sector, which is active in buying produce and selling it under contract to domestic and export market outlets. The three main components are research, extension and marketing. Research activities focus on production, ensuring continuous and reliable food supplies and introducing new crops and technologies aimed at value creation. Extension is responsible for technology transfer, crop production promotion, postharvest handling and assisting farmers in GAP and production planning. The extension stations are also used as field collection centres where produce is collected and aggregated. Marketing is run by a separate government department with links to the private sector. The marketing sector processes orders from buyers and conveys this information to the extension workers who are responsible for meeting the market demands. Progressive farmers are used as intermediaries between the extension workers and farmers. To date results have been good. Farmers are willing to improve the quality of produce sold by strictly following the rules and regulations of food safety and quality assurance. This in turn has led to an expansion of the marketing channel to high-end markets and export. The project, although receiving considerable public sector assistance, is an example of public-private sector partnership through formal contract relationships. The project provides a good example of successful public-private collaboration under the moral authority of the King of Thailand – who creates a common vision and commitment.

Philippines – NorminVeggies, North Mindanao: NorminVeggies – the Northern Mindanao Vegetable Producers Association – was set up as an association of smallholder producers, supported by USAID, to access competitive modern markets. NorminVeggies was set up as a non-stock, non-profit organization with the bulk of its membership constituting independent growers, small farmers and NGO service providers. In order to link producers to both traditional and modern market supply chains small producers had to better coordinate activities among themselves as producers, and with business service providers and other stakeholders, to ensure that fresh produce is consolidated and efficiently brought from farms to the markets. The association promoted group marketing to concentrate selling power and avoid individual sales to spot markets where there is considerable price uncertainty. The association also established a consolidation centre that enabled NorminVeggies to respond to expanding market opportunities in other parts of the country. The scheme provided a range of MOAS particularly in marketing and the organization of producers. Assistance was provided through local NGOs that were also members of NorminVeggies, in partnership with Catholic Relief Services (CRS), in forming producer clusters to ensure reliable product supply and more effective participation in the market chains. The clusters consisted of informal groups of five to 15 members with a common vision and objective around a particular product (or set of related products). As part of

a cluster, farmers could formulate common marketing strategies and value-adding activities. The cluster members were expected to follow a quality assurance plan for each product and share expertise and good practices of farm management. Moreover, by originating from these clusters, farm produce became traceable to a particular farm and grower. NorminVeggies was responsible for organizing producers into the clusters for product consolidation, providing support in supply chain management as well as networking with various institutions. Technical assistance was also provided in production planning, postharvest handling, market information, marketing and quality and safety. The programme highlighted the close interrelationship of these activities and the need to address them comprehensively through networking and alliance building with government (national and local), resource organizations, NGOs, businesses and research organizations. These were seen to be critical in enabling small producers to attain a breakthrough in dynamic, modern markets.

Indonesia – Agroprocessing and Marketing of Vanilla: The project was funded by GTZ and implemented from 2003 to 2006. The MOAS recipients were largely smallholder farmers and farmers located in resource-poor areas. A value chain approach was conceived and vanilla was selected as having the potential for wide impact among the rural community. Focus was placed on enhancing the quality of vanilla to attain premium prices. Emphasis was given to the marketing and processing of agricultural products. Advisory services were considered vital to increase farmers' awareness of new income-generating opportunities and linking them to potential buyers outside Java. MOAS was identified as a priority but a new topic for agricultural extension. The project aimed to address some of the gaps in the extension service by strengthening the capacity of both local communities and local government to assist farmer groups to gain access to knowledge and resources. The project provided MOAS support directly whilst facilitating linkages to applied research and financial institutions. The range of services provided included the provision of technical and market information, advice on certification, marketing support, lobbying and advocacy, training and farmer organizational development. Linkages with finance were facilitated by intermediate service providers. Capacity-building programmes were directed towards agricultural extension workers, NGOs and private service providers in an attempt to diversify their knowledge and skills in producing and marketing high-value vanilla products. Specialized expertise, however, was unavailable within the public extension system and private service providers and NGOs were brought in to provide assistance in the marketing of niche products and value addition. Extension staff also received on-the-job training in cooperation with the private sector. The project also funded other more advanced service providers from outside the area and backstopping by external trainers to improve the capacity and increase the scale of service provision. The role of local government in coordinating service provision from these different sources was pivotal and it was also in the position to assist those producer groups that lacked resources. Marketing, however, was conducted by the private sector. Farmer organizations were seen as important entry points for technology transfer as well as marketing and processing. The producer organizations, especially, complemented the diversified role of extension workers by mobilizing inputs and access to services in line with the needs of their members. This project was seen as a departure from the traditional production-oriented public sector extension by providing marketing and value addition advice as well as support in community development and farmer group formation. The main lesson from this case study is that community and group organization at different levels are key factors in enhancing agricultural production and ensuring successful marketing and processing.

Indonesia – Farmer Empowerment through Agricultural Technology and Information: This World Bank-funded project (2007-2012) has been designed to develop a demand-driven, market-oriented agricultural services system based on partnerships among farmer groups, public agencies and private sector enterprises. The envisaged outcome is increased accountability and effectiveness of public service provision in support of diversified farmer incomes. The project aims at developing a pluralistic support service facility that provides MOAS through the public sector Agricultural Advisory Services backstopped by private sector service providers and NGOs. A particular area of MOAS support is in developing the entrepreneurship capacity of service providers and farmers. As extension workers have limited qualifications in agribusiness, this required a strong capacity-building focus. The private sector also plays a role in the project by providing technology, inputs and finance through commercial services. NGOs also play a technical role in facilitating the preparation of

business plans. The main challenges that farmers face include unstandarized quality of produce; lack of continuity, especially for seasonal commodities; poor product handling (packaging, sanitation etc.); and limited market access. In response to these constraints a broad range of MOAS services is provided that covers all production and postproduction functions. The MOAS services provided are closely linked to finance service provision (partnering with the Bank of Indonesia to facilitate micro-, small- and medium-enterprise development and providing capital from food-energy credits). The project also provides technical backstopping support to service providers in preparing business plans, conducting feasibility studies and advice on production and postproduction technologies and marketing. Many of these services are subsidized by the project and provided at no cost. Support for value adding, certification, contracts, food safety and financial management are charged to producers and farmer groups by being embedded in the costs of the services. ICT programmes are also being developed to promote farmer-to-market linkages. The demand for market information, information on improved technologies and subject-matter specialist advice appears to be high. Innovative ways are sought to match the incongruities in the supply and demand for information. An important lesson learned from the provision of MOAS has been the formation of market linkages with the private sector and the need for continuous and regular service support along the entire value chain. The training programmes offered cover broad subject areas but are hampered by their use of untrained facilitators. While headquarters-based training centres, responsible for example, for conducting training programmes in organics (rice production, horticulture, fertilizer and biopesticides) are quite effective, skills at the district level are lacking. The project has already observed a noticeable impact. There seems to be readiness by farmers to use their improved skills in business and some of the producer groups are developing into business ventures – individual and as a group. Additionally, the project has attempted to reduce gender disparities by paying special attention to the potential of women as entrepreneurs. The concept of farmer-driven extension seems to have been successful in motivating farmers to establish farmer organizations and empowering them to demand the services that they need. There has also been success developing legal business as a prerequisite for both partnership building and mobilizing capital.

Viet Nam – Extension and Training Support Project: The project was supported with funding from the Swiss Government and implemented over the period 2003 to 2006. The main purpose of the project was to provide extension and training support to upland farmers through a demand-driven process. The project was area-based and was intended to test and develop „innovative' extension approaches for replication and scaling up. The direct clients of the project were service providers but ultimately the final clients were individual smallholder farmers and farmers organized into cooperatives. Advisory services were provided through existing government agencies as well as the private sector. In 2005 the project recognized the importance of reorienting extension towards the market as a response to a change in national policy. Efforts focused on developing the capacity of public sector extension workers through a training of trainers programme in marketing and value chain development. The project also involved organizing farmers into farmer groups and developing strategies for livelihoods diversification and farm commercialization. NGOs were also supported to provide a more concerted range of market-oriented services that includes facilitating market linkages and developing farmer capacities in group procurement and marketing and providing market information. The NGOs and government extension service were active in facilitating linkages with processors and other market outlets. The project also supported input suppliers and traders to provide advice on input use and output quality and prices. Traders were encouraged to provide pre-finance to producers with the expectation that produce would be sold to them. Formal contracts were established among farmers in the lowland areas. In upland areas farmers sold to traders and relied on trust and less formal agreements. The service providers were trained on value chain development, rapid market appraisal and a more general understanding of the market. The main lessons learned were: (i) the need for MOAS clients to be diverse, including formal and informal organizations, the public sector as well as private institutions and businesses; (ii) the need for policies to avoid market distortions; (iii) the need to address public sector administration reform, i.e. incentives and planning processes; (iv) the need for market-oriented services to be integrated closely with financial services; (v) the need to develop a comprehensive training strategy together with the relevant training materials; and (vi) the

need to raise awareness of local government staff of the importance of marketing – conducting market appraisals, demand analysis and marketing extension.

China – agricultural insurance pilot programme: China has been testing agricultural insurance programmes over the last decade as a response to the increasing incidence of natural disasters that have impacted on the rural community. As a result of global climate changes, agricultural production had been volatile and according to government estimates the average annual agricultural loss has reached 12.9 percent. In 2007 the government initiated an agricultural insurance pilot programme involving a number of institutions from the public sector as well as private insurance companies and NGOs. The main challenge facing the scheme was the lack of insurance awareness among the many small producers coupled with low coverage. The vision of the programme was to expand security and coverage. The government, through this pilot programme, provided a range of insurance-related services at a highly subsidized rate. The MOAS support includes: (i) awareness raising among policy-makers, extension officers and producers of the agricultural insurance programme including government policies, insurance policies and operational modalities; (ii) assistance to insurance companies in collecting premiums from individual farmers; (iii) assessing the losses in production as part of the claims procedure; (iv) supervision in the operations of the insurance companies; and (v) research into new insurance products and instruments. The role of the public sector extension service, the private sector and NGOs is divided depending on the advisory services offered. These were categorized as dissemination, marketing, claims and advisory services to a range of farmers from the most vulnerable to larger-scale commercial farmers. These services – although provided as a bundle – also provide links to the availability of financial services. In rural areas access to finance is very difficult. As part of a shift in government policy there have been efforts to develop rural microfinance institutions. The combination of agricultural insurance services and financial services is regarded as a mutually supportive solution for the two actors. While the government was the overall programme manager it also provided extension support and assistance to the private sector and NGOs. In China it was seen that private insurance companies cannot afford the indemnity of agricultural insurance because of the high risks involved. Government support in the form of subsidies was crucial. Nevertheless, there is also recognition of the importance of private sector insurance companies in operating the agricultural insurance programme. In terms of coverage, the programme is regarded as successful and a good example of a public-private partnership, although with varying modalities depending on the province and locality.

2. Private sector-led interventions

India – Mahindra Samriddhi. A holistic private consultancy service: Mahindra Samriddhi was pilot tested in 2008 by Mahindra and Mahindra Ltd. a large tractor company in India. The company was supported by USAID as part of a project that involved state agricultural universities in the provision of technical services at the district level. More than 100 Samriddhi centres were established. Samriddhi centres also provide market-related information and offer a wide range of agriculture-related services under one roof. Apart from farm mechanization, MOAS addresses input suppliers, market price information, training on production, organizing farmers, technical services (for example engineering, maintenance, packaging, laboratory testing of safety parameters) and IT communication services. ICT is part of the MOAS strategy of providing market rates through Web sites and also through text messages sent over mobile phones. Farmers are encouraged to work closely with Mahindra's Samriddhi centres and to increase productivity. Successful innovative farmers are acknowledged and the most successful farmers become members of the Mahindra Samriddhi Club, which entitles them to a discount on spare parts purchased from any of the centres. The farmers are also helped to attain premium prices by receiving advice on improvements to both quality and yield. Need-based training on plant protection, soil health, cultivation practices etc., is given to needy farmers under the productivity improvement programme. Public-private sector collaboration exists, as agricultural universities provide technical support through subject-matter specialists who are available for farmers' training programmes.

India – Tata Consultancy Services: Tata Consultancy Services (TCS) launched mKRISHI in 2007. This is an innovative technology using sensor and mobile phones to offer personalized and integrated services to farmers. mKRISHI was piloted in four villages for two years and launched on a commercial basis in several villages in Punjab and Utter Pradesh states. It allows farmers to send queries in their local languages through a mobile phone and provides personalized responses with advice or relevant information in these languages. It also helps literacy-challenged farmers by allowing them to use the service by means of voice SMS. Through mKRISHI, farmers can send their queries to a remote expert via their mobile code division multiple access (CDMA) handsets. Along with their queries, they can also send a photograph of the crop through a camera phone. The information related to crop, soil and microenvironment issues, gathered by sensors, is sent to experts through an automatic weather station using the cellular network. Farmers receive responses to their queries through the same channel. Multiple technologies which have been combined include cellular networks, camera phones, automatic weather stations and soil and crop sensor technologies. This helps to bring vital information regarding local weather, fertilizer requirements based on soil conditions, pest control and current grain prices in local markets in a rich content format to the farmer's handset. Apart from their better-off counterparts, the initiative enables small and marginal farmers to interact with remote experts to obtain personalized advice, thus bridging the gap between farmers and experts; this helps farmers to become aware of best practices and the latest agricultural technology such as Integrated Pest Management. TCS has engaged with diverse communities, from established government bodies and academic institutions to diverse associations of farmers. TCS is partnering with stakeholders such as agricultural input companies, poultry and dairy companies, agriculture universities, NGOs, regional rural banks and bringing them together on the mKRISHI platform, enabling farmers to meet requirements in an integrated fashion. The company is providing location- and time-specific information on demand for agricultural inputs and supply of certain produce.

India – commercial delivery of information services in the farm sector. Indian Agribusiness Systems Pvt. Ltd. (IASL): Information asymmetry is often regarded as one of the major market failures, especially in isolated and remote rural localities. Indian Agribusiness Systems Pvt. Ltd (IASL) was established in the 2000 as a private for-profit company with the objective of removing the information asymmetry prevalent in the agriculture sector. IASL specializes in a particular type of service – provision of information and knowledge – tailored to meet the specific needs of the target groups, which include small and marginal farmers, commodity traders, government agencies and NGOs. The company primarily provides its specialized services through: (i) publications; (ii) online services; and (iii) consulting. Of these products offered, farm publications (*Agri-watch*) are primarily directed towards farmers. Efforts are being made to produce content specific to farmers' requirement. Sales are mostly in small towns but largely to farmers, mainly the leading farmers in the area. This group is followed by literate smallholders, who find its comprehensive information useful. Other services are utilized mainly by commodity traders and other stakeholders. IASL has also cooperated with NGOs, kiosk owners and private sector organizations in order to expand the distribution network of *Agri-watch*. IASL has demonstrated a viable, commercial model of meeting the information needs of rural clientele without any subsidization. A challenge facing IASL was to go beyond Hindi and Marathi into the other vernacular languages. The six languages IASL has identified as critical are Bengali, Oriya, Telugu, Gujarati, Tamil and Kannada. These states have a large number of rural poor and IASL will be in a position to fill in the lacunae in the current knowledge dissemination system up the service delivery ladder. Usually public sector providers, by providing totally subsidized information services, dominate the formal rural information market. IASL has demonstrated a viable, commercial model of meeting the information needs of rural clientele without any subsidization.

India – delivery of embedded services via contract farming. Pepsico in Punjab Province: In 1988, the Punjab Agro-industries Corporation invited Pepsico as a joint venture partner to procure and process certain fruits and vegetables. The company was to enter into a procurement and input contract with farmers, under which it not only agreed to buy not only specified quality produce from a contracted acreage at a fixed price, but also inputs, such as seedlings, on credit, and technical advice free of cost. The company selected contract farmers based on: (i) their ability to adopt new technology; (ii) land suitability; (iii) assured irrigation; (iv) a positive financial position; and (v) commitment and literacy level. Tomato seedlings were supplied by the company on a part payment of 25 percent in advance. The balance was extended as credit, which was deducted from the payment for produce sold to the farmer. Sets of equipment, free of cost on a returnable basis, were given either to a group of five to ten farmers or for 50 acres of tomato crop. Besides introducing new seed varieties, the company provided extension assistance in the form of deep chiseling and a new method of transplantation. Information booklets on farm and non-farm techniques were printed and distributed by the company. These provided farmers with information on selection of fields, soil testing and fertilizer application, bed preparation, transplanting of seeds, irrigation, weeding, plant growth management, pest management, etc. New techniques for applying pesticide considerably reduced the volume needed and increased its effectiveness. The company extension workers were also constantly in touch with farmers to guide them. They also inspected and replaced defective plants at no cost. Demonstrations and training camps were held regularly. They promoted the locally-relevant traditional techniques, for example, use of a local grass called *sarkanda* for protection of plants from winter and black ash for covering the soil to prevent crust formation and to give warmth to the seeds. Direct linkages between the producers and processors were established as a viable strategy for linking farmers with global food chains. Besides the sale contracts, farmers received embedded services from the contracting company. The introduction of contract farming with agriprocessing companies, not only increased the net income of the farmers involved, but also helped them to acquire new skills and knowledge. It also helped to build up a system of regular monitoring of crop conditions linked with appropriate expert systems for remedies. It increased the prevailing wage rates in the area, later countered by an influx of labour from outside the state.

India – rationalizing the procurement supply chain through usage of ICT. ITC's e-Choupal: ITC is one of India's leading private companies, with annual revenues of US$2 billion. Its international business division was created in 1990 as an agricultural trading unit; it now generates US$150 million in revenues annually. The company has initiated an e-Choupal effort that places computers with Internet access in rural farming villages. The e-Choupals serve as both a social gathering place for exchange of information (*choupal* means gathering place in Hindi) and an e-commerce hub. The e-Choupal model has required ITC to identify and train local farmers to manage each e-Choupal. The computer, typically located in the farmer's house, is linked to the Internet via phone lines or, increasingly, by a Very Small Aperture Terminal (VSAT) connection, and serves an average of 600 farmers in ten surrounding villages within a radius of approximately 5 kilometres. Each e-Choupal costs between US$3 000 and US$6 000 to set up and about US$100 per year to maintain. Using the system costs farmers nothing, but the host farmer, called a *sanchalak*, incurs some operating costs and is obligated by a public oath to serve the entire community. The farmers can use the computer to access daily closing prices on local *mandis*, as well as to track global price trends or find information about new farming techniques, either directly or because many farmers are illiterate, via the *sanchalak*. They also use the e-Choupal to order seed, fertilizer and other products such as consumer goods from ITC or its partners, at prices lower than those available from village traders; the *sanchalak* typically aggregates the village demand for these products and transmits the order to an ITC representative. At harvest-time, ITC offers to buy the crop directly from any farmer at the previous day's closing price; the farmer then transports the crop to an ITC-processing centre, where the crop is weighed electronically and assessed for quality. The farmer is then paid for the crop and a transport fee. „Bonus points', which are exchangeable for products that ITC sells, are given for crops with quality above the norm. In this way, the e-Choupal system bypasses the government-mandated trading *mandis*. Farmers have benefited from more accurate weighing, faster processing time and prompt payment, and from access to a wide range of information, including accurate market price knowledge and market trends, which helps them to decide when, where and at what price to sell. Farmers selling directly to ITC through an e-Choupal typically receive a higher price for their crops than they would receive through the *mandi* system. At the same time, ITC benefits from net procurement costs (it saves the commission fee and part of the transport costs it would otherwise pay to traders who serve as its buying agents at the *mandi*) and it has more direct control over the quality of what it buys. ITC gains additional benefits from using this network as a distribution channel for its products, and those of its partners and is a source of innovation for new products. Besides receiving higher incomes, farmers receive embedded services like market information, technical services and access to procurement of goods sold through ITC's distribution chain. The success of e-Choupal is also remarkable in the light of it being a totally non-subsidized intervention and one totally conceptualized by a corporate entity. However, the initial investment required in setting up ICT systems is substantial and might deter its replication by other smaller players. Nonetheless, this case study indicates that in weak and rural markets, embedded services, the costs of which are covered in the business transactions, seem to be one of the most viable strategies for enterprise development.

Malaysia – the K-Farm GAP Carambola Programme: K-Farm is a private sector fruit export company with strong links to the farm. The objective of the programme is to produce safe fruit for the export market in Europe. The programme has been promoting Global GAP and has operated for more than ten years which is witness to its sustainability. K-Farm realized that the lack of competitiveness was related to the ignorance of farmers about new production technologies and their lack of knowledge and information of market requirements. Farmers were largely isolated from access to production technology and market information. Farmers, through the scheme, were provided with premium prices for GAP Carambola and an assured market. The provision of MOAS is vital in making this happen. The company provides regular extension support to farmers on GAP methods and technologies as well as market price information. The company invested in developing an extension system led by a technical manager – an agronomist – trained in GAP, the Quality Management System, Integrated Pest Management and marketing. Farmers are brought into the scheme through contracts and the programme provides them with regular extension support. Each farmer signs a contract with K-Farm that spells out the expected price and terms of payment as well as quality specifications. Sanctions are imposed when compliance is not fulfilled. A rigorous and comprehensive

training programme has been designed supported by regular extension meetings. Farmers are taught about pest life cycles, pesticides' chemical functions, ecological balance in the farm and market situations. Production programmes are formulated for each farmer in accordance with the size and age of the trees. All farmers have to be committed to the programme and if any farmer fails to comply, the failure becomes the responsibility of the whole group. Thus each farmer also becomes a custodian of the programme. The extension programme includes scheduled weekly farm visits by the technical manager; workshops; group visits to chemical companies and other farms; the preparation of recommended production plans; the provision of recommended production practices; and the dissemination of extension information to farmers. K-Farm facilitates meetings with experts and makes arrangements for the experts to meet with the farmers. The production and training programme is instrumental in improving their productivity and efficiency. The initiative is an example of strong linkages between the company and its growers on the one hand, and the export markets on the other. The approach taken was to connect the small individual farmers into the K-Farm Carambola supply chain and make them an integral part of the chain so that the farmers can control their production quality, control their pest management and cost, and manage the production volume to support client demand regularly and consistently. The company monitors very closely the production schedules of the farmers, ensuring that there is year-round production that matches the demand of importing clients resulting in consistent supplies and high prices of produce sold.

Thailand – promoting GAP through a private sector initiative. The SWIFT approach: A similar private sector initiative was initiated by the SWIFT company in Srakaew Province, Thailand as part of a contract farming operation to promote GAP and organic farming (organic asparagus). SWIFT's model was initiated in 1989 and has been fine-tuned to meet local conditions and specific requirements in different parts of Thailand. The programme tries to address some of the constraints inhibiting smallholders from receiving fair prices for produce sold. Strategies employed were: (i) direct access to markets by smallholder farmers, thus diminishing their continued dependence on intermediaries and traders; (ii) streamlining of the marketing channel, thus reducing fragmentation and market channel inefficiencies; (iii) reducing the dependence on fluctuating and volatile „spot markets'; and (iv) improving logistics and handling in the supply chain from farm to market and reducing wastage. SWIFT's approach is to enhance the net income of farmers by increasing the value of farm outputs and reducing farming costs. This is done by exposing small farmers to proven technologies and practices that improve net returns per unit of land. The programme organizes smallholder farmers into groups under a „contract farming' model. Production planning at farms is laid out by the groups in collaboration with the company to supply a predetermined daily volume of fresh farm produce. A collection station is set up to collect harvested produce on a daily basis from contract growers. Members of the group have direct access to markets and can sell all grades of their farm produce at guaranteed prices, agreed upon prior to planting. Fair pricing is determined by giving due consideration to the cost of farming and retail price in any targeted market. Key to success is trust building and transparency. The company recognized the need for MOAS to get farmers to shift from traditional farming practices to adopt the knowledge-based principles of GAP. The adoption of GAP can only be achieved through long-term intensive training, capacity building and by giving farmers a strong incentive to learn and to conform to GAP guidelines. MOAS is provided through a long-term and intensive training and capacity-building programme, aimed at helping smallholder farmers to understand the principles of knowledge-based farming and to put them into practice. The training programmes are broadly based covering technical issues such as preharvest practices, farm maintenance, harvest and postharvest techniques as well as farm business management training – financial management, record keeping and group management. Training is continuous and conducted on a frequent basis over the long term. Extension support is also provided to increase crop productivity, ensure the quality of produce and food safety management and maintenance throughout the supply chain. Postharvest control and traceability systems are applied immediately after harvest at each collection station. In addition to training and extension support, SWIFT provides farmers with financial assistance. This includes long-term interest-free loans to the groups. Loans can be converted into grants in the event that members face severe damage or suffer total losses in farm production because of uncontrollable factors. The combination of training, extension and financial support is vital

to the success of the business model and training and capacity building lie at the heart of the approach and should be made available to smallholders at minimum or no cost.

Annex 2

Checklist of issues to strengthen the MOAS system

Context

- What are the agro-ecological and socio-economic conditions of the country and/or specific regions and areas?
- What are the characteristics of MOAS clients? Who are the main stakeholders involved in MOAS? What existing extension support is available to farmers and other stakeholders?
- What is the existing extension policy environment? Is extension public sector-led or is a pluralistic approach to extension being promoted? What incentives have been devised to promote private sector advisory service delivery?
- What is the existing MOAS environment? Is it organized at national or decentralized levels? What levels of decentralization exist?
- What products have high potential market demand and could perhaps be supplied by producers nationally or locally?
- What are the risks associated with the identified markets?
  - Low commodity prices?
  - Limited demand?
  - Rapid price fluctuations?
  - Competition from other existing or potential suppliers?
  - High marketing costs that may make supply uncompetitive?
  - Quality and certification standards that may be difficult to meet?
- How well developed is the local, regional and national marketing infrastructure for both inputs and produce?
- To what extent are markets accessible to a range of producers (large-, small-scale; men, women; different production systems)?

Public policy

- Is the overall policy portfolio of public sector MOAS consistent with the vision of the agriculture sector policy?
- Are fiscal priorities of public sector investment in extension and research consistent with the agriculture policy in general?
- To what extent does the policy towards MOAS take adequate account of the interests and values of different stakeholders? How inclusive is the process of policy formulation? In which ways has there been constructive engagement of donors and national, regional and local partners in this process? To what extent is donor coordination either complementing or compromising the emergence and strengthening of local coordination efforts?
- Does MOAS policy consider the importance of accompanying support to agricultural education, to producer organizations and to agricultural research as part of the innovation system?
- Do public sector institutions take the market imperative sufficiently into account and contribute to an enterprise culture?
- Does policy and practice integrate sufficiently the market orientation with other issues such as food security, environmental protection and equity? Are the institutional mechanisms in place appropriate to achieve the right balance given the context?
- Are the actions of agencies which finance or deliver MOAS, including donors, consistent with the agricultural policy framework?

- Has the country or region prepared an investment plan for MOAS? If not, what approach might be followed to get policy-makers and other stakeholders to agree to prepare an MOAS investment plan? How can a transparent, participatory process be ensured for plan formulation?

Public sector extension

- What are the structure (centralized/decentralized) and functions of the public sector innovation system (extension, research, education etc.)?
- How effective is the public sector system? What are the major constraints and obstacles to effective performance?
- Is public sector investment being used to support market-oriented extension in a viable and sustainable manner?
- Does the public sector demonstrate the necessary capacity for an enabling and regulating role in agricultural extension?
- Are the incentive mechanisms (staff appraisal and reward system) for extension staff supporting the implementation of a greater client/customer/partner orientation?
- Are public funds readily available to revitalize the public sector?
- Have measures been introduced to ensure cost recovery and generate revenues?
- Has a human resource assessment of the agricultural extension, research, training system been conducted?
- Does the public sector have an effective monitoring system? If not, how can it be designed?
- To what extent are public finance mechanisms appropriately targeted, transparent and regulated? Are they coherent with overall policy objectives?
- In what ways have donors been engaged in determining alternative financing mechanisms for agricultural extension? What has been the impact of these activities?
- Do donor-financing mechanisms encourage and enable situation specificity and flexibility in agricultural extension?
- Has government accepted the need to reduce and better target its range of intervention, and to better define its role? Does the public sector recognize its strategic role to encourage the development of greater pluralism?

Decentralization

- What choices have been made in terms of decentralization? Has decentralization led to greater situation specificity and flexibility in the organization of MOAS? Are service providers able to act flexibly in the service of their clients?
- To what extent has decentralization shown benefits in terms of accountability, decision-making and information flows among MOAS providers and users?
- Is there conflict between moves for greater local autonomy and national policy objectives? In which way is decentralization nested effectively within mechanisms for national coordination?
- Are strategies for the decentralization of other agricultural services complementary to those of extension?
- To what extent are links to agricultural research being strengthened under prevailing decentralization strategies?

MOAS framework and coordination

- Does a strategic framework exist for the provision of MOAS?
- What programmes are MOAS related (donor-funded, government-run, private sector initiatives etc.)?
- How effectively and efficiently are the MOAS programmes operating? Are clients satisfied with the quality of services provided?
- In which ways is pluralism in the financing and delivery of MOAS being promoted?
- Is there a clear distinction between regulatory and advisory functions in the way they are distributed among different actors and agencies?

- To what extent has a legitimate role for different actors been accepted into policy and practice? Is there an open discussion on which actor is best able to perform specific functions and provide particular services?
- To what extent is there congruence in style and content of advice among the range of service providers dealing with support for market access?
- What has been the impact of the different programmes? What insights and lessons can be learned from this example, e.g. good practices, obstacles, pitfalls?
- What mechanisms are in place among a range of actors and agencies for coordinated management of MOAS and related functions?
- What forms of joint action and coordination exist among different MOAS providers?
- How are extension planners facilitating appropriate forms of interaction and flow of information among different key actors?
- Is there evidence of multi-agency cooperation that brings greater benefits to producers?
- Are there any uncompetitive practices (establishment of cartels, monopolies, forms of subsidy) that may hinder the development of greater pluralism and better service to users?
- To what extent are extension-research linkage mechanisms dealing effectively with the range of different actors and agencies?
- Has donor support managed to adequately capture the changing needs of their partners in the wake of decentralization, pluralism and greater client-orientation?
- What steps have been taken to consult with national, regional and local authorities to ensure that they are fully supportive of the MOAS system?
- To what extent does policy realistically envisage and promote joint actions among agencies (public, private, producer organizations) that build on their different roles and strengths?

Policy and infrastructure

- Is the macroeconomic environment suitable to promote commercial farming and market linkages?
- In which ways do the macroeconomic, legal and policy environment provide incentives or disincentives to private sector development (whether for-profit or not-for-profit)?
- Is the business environment conducive to promote private sector business services?
- Do the legal and the judicial systems safeguard property rights and is there a workable contract law?
- Are there appropriate forms of market regulation that can act against uncompetitive practices (e.g. monopolies, cartels, market domination)? Is there sufficient regulation and quality control of the information and advice made available by commercial enterprises?
- Is the available infrastructure (roads, electricity, water, communications, stores, port and airport facilities) suitable for private sector investment in farming and MOAS service delivery?

Public-private collaboration

- Is there clarity on the roles of the public and private sector with respect to MOAS?
- Does the financing and delivery of extension by various agencies take into account the varying nature of agricultural goods and services (private goods, public goods, externalities)?
- Is there public-private cooperation in the financing and delivery of advisory services? To what extent are these appropriate for enhancing the longer-term effectiveness and efficiency of MOAS?
- Is the public sector capable of managing new forms of public-private cooperation?
- Are there effective and transparent mechanisms by which the public sector can monitor and evaluate the contracted private sector?
- How can the private sector be encouraged to invest in MOAS provision?
- Are there incentives that could be introduced to mitigate the risks of private investment?
- In what other ways and to which other actors are private service providers (both for-profit and non-profit) held accountable? Are these appropriate for the given circumstances?
- What public sector mechanisms can be used to promote private sector investment?
- What links exist between private and public sector service providers?

- What mechanisms are in place to enhance the role of producers in financing and delivering advisory services?

Services – demand and supply

- Have detailed demand and supply appraisals of MOAS been conducted? If not, what type of MOAS services and information are provided?
  - Advice?
  - Information?
  - Training?
- Are input supplier services available locally? Do these carry the necessary inputs demanded? If no suitable suppliers or services are available what arrangements need to be made to ensure that they become available on a sustainable basis?
- What other relevant services exist and how are they linked to MOAS?
- What additional services are needed?
- Who provides the services? What approach is used to deliver services?
- How effective are these service providers in MOAS delivery?
- Is MOAS linked to commercial services? What are the forms of linkage?
- How many service providers are there? What are their qualifications/experience?
- What are the major constraints?
- Who are the main clients/beneficiaries of MOAS?
- How many and what types of farmers use the services?
- Are the actual clients the types of farmers that the service intended to work with?
- What motivates farmers to use MOAS?
- Are there other clients supported by MOAS services?
- How do the MOAS providers and the clients relate to each other?
- How are producers regarded by agencies involved in MOAS: as client/customers (producers in control) or beneficiaries? How does this perception influence the level of service provided?
- Does a balance of market and public concern take into account the priorities of different social groups, particularly in terms of gender and poverty?
- Are the interests and values of different groups of actors being adequately integrated into the MOAS process
- What services are fee-based? Which services are embedded? How effective are the systems at attaining cost recovery?
- Does the setting of fees take account of „willingness to pay' and the extent to which a good or service can be considered as private or public interest?
- Is any support given to the service providers? If so, what form does it take?
- Are incentives and subsidies being used to induce the demand for and supply of MOAS services? If subsidies are being used, what form do they take? Is there an „exit strategy' to terminate subsidies? For how long are the subsidies expected to last?
- What insights and lessons can be learned from the example, e.g. good practices, obstacles, pitfalls?

Production and food safety

- What existing extension support is available to farmers?
- Is extension advice available to assist farmers in selecting improved technologies, utilizing improved inputs, synchronizing production and marketing?
- How effective are the research extension linkages?
- Are findings from demonstrations used to disseminate improved technologies? Are the findings from on-farm trials used to increase productivity?
- Is information on production technologies readily available?
- Is information on food safety and good agricultural practices readily available?
- Do MOAS providers address input supply issues – input selection, supply, cost and quality?

Market information, extension and contracting

- To what extent are extension planners and providers attuned to the state of the market? In which way are market signals integrated into information flows among advisors and producers?
- To what extent is there available market price information, including information on trends, forecasts and market research?
- Can farmers get access to impartial and unbiased marketing and technical information?
- Do farmers have the capacity to meet the new market conditions? If yes, what training do they nevertheless require? Are they able to make necessary investments?
- Are farmers likely to fully understand the purchase conditions, particularly in relation to pricing and quality aspects? If not, what steps must be taken to ensure they develop an understanding?
- To what extent are advisory service providers providing advice on contract negotiations, appraisal of contracts and compliance?
- Are written contracts necessary or are verbal contracts likely to be sufficient?
- Have steps been taken to maximize the involvement of farmers in this process and to ensure that they fully understand the conditions of the contract?
- What arrangements can be made for farmers and buyers to meet, for buyers to visit farms and for farmers to see how their products are marketed and used?
- Do MOAS service providers assist farmers to identify new buyers? Is advice provided to link farmers to markets? Are farmers provided with advice on marketing costs, market margins, grading, bulking, postharvest handling, packaging, storage, labelling etc.?
- When new market opportunities arise, is the research system able to keep pace and provide the necessary support to extension workers and producers?

Management and entrepreneurship

- Are business management services available to farmers and other stakeholders in the area?
- Which organizations provide these business management services?
- Are business management services provided in combination with finance or commercial marketing services? How effective is the provision of bundled services?
- Are producers provided with advice on ways of organizing farm enterprises; farm enterprise diversification/profitability, farm planning, labour use; cash flow and money management; investment appraisal, risk management, record keeping, market appraisal and the preparation of business plans?
- What sources of market and business information and other advice on marketing are available?
- Are clients willing to pay for these services? If not, what can be done to create a demand for business management services?

Financial services

- Are financial services available in the area?
- Have any of the financial institutions expressed an interest in providing seasonal credit or term lending to farmers or agro-entrepreneurs? If not, would it be possible through a tripartite or quadripartite arrangement with private sector buyers and/or input suppliers?
- Do those financial institutions have experience in lending to small farmers on a sustainable basis and do they offer loan products compatible with farmers' cyclical cash flow? If not, would they be prepared to do?
- What are the collateral requirements of the financial institutions? Are these acceptable to farmers? If not, can alternatives be explored?
- Do any financial institutions in the area offer savings facilities for small-scale depositors?
- Are financial services provided in combination with market advisory services? How effective is the provision of bundled services?
- Are producers provided with advice on ways of mobilizing finance, negotiating finance and conditions of lending?

ICT

- Is there an ICT system set up? What forms of ICT are being used (radio, video, cell phones, Internet, computers)? What is the hardware/software balance? How well is the system working? What are the bottlenecks? How can it be improved?
- What type of information is being provided for clients through the ICT system?
- What additional information is needed?
- How can this information be best collected? Is there a need to train staff?
- How effective is the system in reaching clients in the rural areas? Is it affordable? Is it sustainable? How can the system be improved?

Producer organizations

- What are the objectives of the producer organizations? How interested are they in extension services?
- What mechanisms are in place for the involvement of producers in the organization of extension services? In which ways are producers organized and how are different advisory services using these organizations?
- What are the advantages of working in groups (e.g. overcoming high individual transaction costs) and are these offset by costs (including time costs) that farmers may incur?
- Is the formation of producer groups/organizations essential to expand the demand for MOAS services?
- Do producer groups have potential to provide services to their members?
- What have been the experiences with producer organizations? Which type of farmer organization appears to work best in providing MOAS services? Is there scope for informal groups to be set up to provide MOAS?
- Should farmer groups be federated? What level of group aggregation is optimal to provide cost-effective services? Is there a possibility of federating/networking with other groups/associations and what would be the advantages?
- What degree of contact and cooperation is there between extension providers and informal producer organizations? Is their importance (particularly for addressing the needs of women and the poor) recognized?
- Is the capacity of group members adequate to provide MOAS services? Are the skills and competencies available? How can the capacity and skills of group leaders and members be enhanced?
- What is the capacity of producer organizations in management, communication, coordination and conflict management etc. regarding access to and provision of extension services?
- Are there farmers who demonstrate leadership skills in enterprise development or training? If not, are there individuals who have potential to lead, if they undergo training?
- Are group members interested in establishing the group as a collective enterprise? Has the group been incorporated? Is it clear to members what legal form the group should take?
- What existing legislation is there relating to farmer groups and is it appropriate to the type of group envisaged?
- In which ways are the producer organizations accountable to the producers? What is the balance in the accountability of producer organizations to donors compared to their members/clients?
- How representative are producer organizations of producers? How inclusive are they of different social groups like gender, wealth and ethnicity?
- What training do group members require? What training would group leaders require in business management, marketing, finance, etc. and how will this be provided?
- Are producer organizations equipped to adapt to changing needs, such as catering for non-traditional target groups (youth, part-time farmers, peri-urban producers, etc.) and the changing situation of their members?
- What is the role of the extension planners and donors in relation to producer organizations?

- Are producer organizations seen as a worthwhile form of investment by the public sector and donors? What attention is given to the building up of effective producer organizations?
- To what extent are producer organizations active in the public policy process? How are the needs of producer organizations being balanced with the needs of other groups in society?

Training

- Are farmers' education and skill levels suited for market oriented agriculture? Have they demonstrated a past capacity to adapt to new activities?
- What farm management and marketing skills do farmers have?
- What are the particular constraints for farmers and rural entrepreneurs to connect to markets?
- What are the training needs of trainers, service providers and producers? What are the gaps?
- What previous training has been conducted? In what areas? How effective has the training been? What were the weaknesses? What needs to be improved?
- What kind of training is needed and in what MOAS technical areas? What should be the duration of the training and approach?
- Who or what organization should be identified to conduct the training? Should clients be charged for the training?
- What backstopping support is available? How can it be made to be effective?
- Do policy-makers need to be made more aware of MOAS? Have they previously attended training workshops? If not, should workshops be designed to create awareness? How can they best be designed?
- Are efforts being taken to develop the quality and skills of youth groups and new recruits by developing a new MOAS-based curriculum?

Monitoring and evaluation

- Do the MOAS programmes/projects have M&E systems set up? If so, what indicators is the system expecting to measure? How effective are they? What are they used for? What problems exist? How can they be improved?
- To what extent do current project M&E systems support the objective of joint learning?
- What mechanisms are in place for mutual exchange and information sharing?
- What mechanisms are in place for facilitating the free flow of information on public goods on the one hand and the „protected' flow of information on private goods on the other?
- In which ways are agencies involved in MOAS accountable to users?
- Is there an opportunity to design a broad multistakeholder M&E system? Is there a demand from donors or government? If yes, what should be the overall design of the system? Could stakeholder workshops be used to share experiences?
- How likely is it that a system can be designed to inform policy-makers and programme managers of programme outcomes?

Sustainability and replicability

- Have decisions about subsidies been taken with full regard for the implication of the subsidies and their affect on sustainability?
- Are new programmes/projects for MOAS delivery being designed? Has flexibility been built into their design and implementation?
- Does the design ensure that it promotes MOAS in a sustainable way?
- How can innovations in MOAS be up-scaled? Have planning workshops been organized with the government to devise a sector programme?
- To what extent have the long-term cost implications of donor-supported programmes been in line with the local funding capacity and the priorities of public sector investment?
- Have donor exit strategies been clearly stated and designed? Are they realistic from a financial sustainability point of view?

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