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Private Sector Extension Activities Targeting Small Farmers in Developing Countries

By Miguel Gómez, Benjamin Mueller, and Mary Kate Wheeler

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Acronyms

CSR	Corporate Social Responsibility
EAS	Extension and Advisory Services
FBO	Farmer Based Organization
GFRAS	Global Forum for Rural Advisory Services
ICT	Information and Communications Technology
ICTA	International Center Tropical Agricultural
IPC	International Potato Center
MEAS	Modernization of Extension and Advisory Services (a USAID LWA Project)
NGO	Non-Governmental Organization
PPP	Public-Private Partnership
USAID	United States Agency for International Development

Executive Summary

Extension systems, be they public or private, have helped smallholder farmers adapt to ever-changing production, socioeconomic, and environmental conditions. For the most part, governments have traditionally provided extension services to smallholder farmers in developing countries. Nonetheless, public support to fund extension programs has dwindled over the past decades. Meanwhile, rapid changes in global food markets in recent years have prompted private companies (for-profit and non-for-profit) to take a more active role in the provision of extension services. In the past, a buyers-market allowed private traders and retailers the luxury to begin thinking about the food value chains at aggregate points of purchase. Today, traders and retailers have expanded their supply chain responsibilities, investing and engaging with smallholder farmers around a number of quality and productivity goals, and responding to pressure from non-governmental organizations (NGOs), consumers, regulatory agencies and governments to expand supply chain transparency from farm to final consumer product.

Private extension initiatives (including public-private partnerships led by food companies and NGOs) are rapidly expanding worldwide. However, little is known regarding appropriate approaches for the private provision of extension services to smallholder farmers in developing countries. To fill this knowledge gap, we conducted a detailed study to characterize emerging extension models led by private organizations worldwide. The findings are valuable for donors and private/public decision makers interested in increasing the profitable participation of smallholder farmers in food value chains.

We offer a conceptual framework to explain how 1) contextual factors, 2) organizational characteristics, 3) partnership arrangements and 4) extension activities influence the performance of private sector extension models. In any given situation, the general context establishes a unique set of opportunities and challenges. We focus on three *contextual factors* that help to explain extension performance: the characteristics of the commodity and associated processing industry; the policies, infrastructure and political relations in a given country; and the degree to which the information required by farmers can be characterized as a public good. *Organizational characteristics* refer to identifying traits of the private sector entities that engage in extension activities. Key indicators include organizational type (private company, social enterprise, NGO, FBO); scope of extension programs (sub-national, national, international); role within the value chain (supplier, buyer, supporter); and years in operation. *Partnership arrangements* address how collaborations among multiple organizations are structured. Specifically, key indicators in this category identify which organizations are responsible for what tasks. We focus on which organization - or combination of organizations - undertakes extension program implementation and funding, respectively. We also consider whether or not extension activities are part of a public-private partnership (PPP). *Extension activities* refer to the mechanisms for delivering extension and advisory services. Within this category we include a range of general extension approaches as key indicators, and we examine their relative importance within an organization's overall extension strategy. Other key indicators include specific extension tactics, communication technologies and extension educator training, among others.

Based on the conceptual framework, we designed a survey instrument to characterize privately-led extension programs and to elicit indicators of performance in multiple dimensions. Data were collected using a survey questionnaire with both close-ended and open-ended questions, informed by our conceptual framework and literature review. The survey included sections on organizational structure,

partnership arrangements, extension activities and scope, objectives and outcomes, funding sources and best practices. In order to understand extension performance, we elicited the primary objectives of the organization (e.g., increased productivity, increased reliability of supply, increase in product quality, increased access to markets, and promotion of technology adoption, among others). We asked respondents to rate their own performance on a scale from one to five for the relevant objectives.

We submitted invitations to over 400 organizations to complete the survey and posted the survey questionnaire on the MEAS and GFRAS websites during the period February-June, 2015. We received survey responses from 101 different organizations (a response rate of over 25%) engaged in extension activities in 42 countries, spanning extension programs in Africa, Asia, Pacific Islands and Latin America. The extension and advisory services that these organizations provide reach more than 3.3 million farmers worldwide. Responses from organizations working in Africa made up 72% of our sample, followed by the Latin America and Caribbean region (17%) and the Asia and Pacific Islands region (9%).

Our findings indicate that there is a high degree of heterogeneity regarding the objectives, strategies, and tactics of privately-led extension initiatives targeting smallholder farmers. Nevertheless, it is possible to identify certain extension service-related characteristics that are associated with specific goals using quantitative analyses. Our analysis across various aspects of extension including objectives, activities, tactics, organizational structure and performance, has enabled us to both understand the complex actors in privately-led extension systems today, as well as identify the major differences between them. We broadly categorize our respondents on the basis of the influence of organizational aspects such as funding, implementation and engagement of partners, into three major organizational types – those characterized largely by a) private business control, b) NGO control and c) partnerships and shared control. We find certain unique strengths and weaknesses of each organization type.

a) *Private business control:* Organizations where private businesses controlled the majority of the funding and implementation were found to be more innovative with their extension approaches and showed a far wider adoption of ICTs and tactics such as farmer-buyer and farmer-farmer networking. These businesses primarily targeted production related direct outcomes of productivity, quality and supply. These organizations also reported relatively higher rates of achievement of these outcomes, but were much less likely than NGOs to have received formal independent and external evaluations of the impacts of their extension.

b) NGO control: Organizations majorly funded and implemented by NGOs were much more likely to target social development related objectives in their extension approach. Although NGOs' self-evaluated performances did not show a high level of accomplishment of these objectives, they are long term outcomes and subject to multiple exogenous factors. NGOs were also far more likely to have their performance externally evaluated. However, NGOs mostly used traditional extension tactics such as demo plots, lead farmer programs and lagged behind other organizations in the adoption of ICTs, communication technology and tactics enhancing coordination across the value chain.

c) Partnerships and shared control: Organizations with equitably mixed funding and implementation across both private and non-governmental actors also lagged behind private businesses in the adoption of innovative tactics and forms of communication. However, self-reported performance levels in these organizations reflected a much better rate of accomplishment of production related outcomes than NGOs.

These organizations tend to not focus on social and community development objectives to the extent that NGOs have embraced them.

Overall, the key takeaways of this study are the following:

1. Privately-led extension programs are multifaceted in nature. That is, multiple objectives and multiple approaches are common, regardless of region or organizational type.
2. Production-oriented goals tend to be prioritized (e.g. productivity, supply reliability) over social and environmental goals.
3. We find a variety of arrangements for funding and implementation, which include single-actor and multi-actor models. We also find more public-private collaboration in funding than in implementation
4. The self-assessment scores suggest more progress toward achieving farm-level goals related to production and market access; and less progress toward achieving social (e.g. poverty alleviation) or environmental goals. In addition, our results suggest more progress in Asia and the Pacific than in Africa and Latin America.
5. Extensions tactics and keys to success. Provision of financial services and farm management training appear to substantially advance several goals. Participatory approaches are mentioned repeatedly as key to success, but how to measure their impact on outcomes is yet to be determined. Our results also suggest increased coordination between private sector corporate actors and international donors working in tandem may lead to extension sustainability. Finally, the emerging Corporate Good philosophy toward development and Public Good may lead to increased cooperation between public extension and private sector extension actors.

1. Introduction

Rapid transformation of the agri-food industry in recent decades has generated global supply chains capable of linking small farmers in developing countries to high value markets, both domestic and international (Reardon et al. 2009). This has created new opportunities and incentives for food and beverage companies to engage with smallholder farmers and invest in their productivity (Bright and Seville 2010). At the same time, public programs to support small farmers through research and extension have declined, despite recognition that technical assistance has the potential to significantly increase revenues for farms of all sizes (World Bank 2003). Reduced government spending and donor funding for agriculture in the 1990s, coupled with declining political support for extension systems widely viewed as ineffective, have contributed dramatically to accelerate to this shift (Wiggins, Kirsten, and Llambí 2010). Public, private and civil society actors share an interest in understanding how global changes in food value chains will affect farmers in developing countries, particularly given the decline in public support for small farms (Gómez et al. 2011).

This question is relevant to not only agricultural productivity, but also broader concerns about poverty and food security, particularly for the world's 500 million smallholder farmers and their families that often struggle to participate successfully in food value chains (UNEP 2013). More than 400 million farmers pursue livelihoods based on two hectares of land or less, and 75% of the world's poor are subsistence farmers (Nagayets 2005). For these people, agriculture is "a driver of growth and poverty reduction," particularly in rural areas (World Bank 2007). Productivity and labor efficiency gains can return substantial income and welfare benefits to the poor, particularly when combined with improved market access (IFPRI 2005; Hazell et al. 2007). Empirical evidence suggests that growth in the agricultural sector is two to four times as effective at reducing poverty compared to growth in other industries (Christianensen, Demery, and Kuhl 2010; World Bank 2015). Modern food value chains offer new opportunities to meet consumer demand while addressing development goals in rural economies.

Dynamic changes within the food system pose big questions for public policymakers and private businesses. Can private sector activities and investments that target small farmers reduce poverty and food insecurity? How will new arrangements involving private sector actors influence the provision of information and advisory services to rural farmers? How might collaborative partnerships among public, private and civil sector actors support private sector engagement with small farmers while ensuring that development objectives are realized for all?

Agricultural extension and rural advisory services is a key arena from which answers to these questions will emerge. To access modern markets, many small farmers will need to adopt new production, harvest, postharvest, and business practices in order to consistently meet high quality and food safety standards. Small farmers may need to join with other producers to form associations or cooperatives with the capacity to aggregate product for sale to large buyers. Farmer adoption of new production and marketing activities will necessitate access to new information, as well as the capacity to interpret and apply that knowledge. The field of agricultural extension is poised to address this need

Agricultural extension was traditionally conceived as "the application of scientific research, knowledge, and technologies to improve agricultural practices through farmer education" (MEAS 2015). Early extension programs featured a top-down transfer of information and technology from research institutions to farmers. However, the definition and scope of extension has evolved significantly over time.

> *"Today's understanding of extension goes beyond technology transfer to facilitation, beyond training to learning, and includes helping farmers form groups, deal with marketing issues, and partner with a broad range of service providers and other agencies. Agricultural extension can thus be defined as the entire set of organizations that support people engaged in agricultural production and facilitate their efforts to solve problems; link to markets and other players in the agricultural value chain; and obtain information, skills, and technologies to improve their livelihoods" (Davis 2009).*

As this definition implies, modern extension systems are inclusive of many activities and actors, and they support adaptive, context-specific programs and policies that respond to dynamic farmer needs. Yet improving livelihoods for farmers is a central theme of extension that has remained constant over time.

Despite a shared emphasis on farmer welfare, it is worth noting that definitions and objectives of extension programs vary across sectors and among organizations that engage with small farmers. In practice, interpretations of extension range from the more traditional: "providing need- and demand-based knowledge in agronomic techniques and skills" (Syngenta 2015), to the more holistic: "enabling change in individuals, communities and industries involved in [agriculture and] natural resource management" (State Extension Leaders Network 2006). As new organizations and institutions begin to engage in extension activities, they bring new perspectives to this work.

The dynamic context of global food and agriculture outlined above has given rise to new types of extension and advisory services, delivered in different ways, and supported by novel institutional arrangements (Figure 1). Over the past 25 years, provision of extension services has become increasingly pluralistic due to investment and engagement of private actors, including both profit-driven and civil society organizations (Sulaiman and Davis 2012). However, the scope of private sector extension activities has not been quantified since 1988 (Swanson and Davis 2014), at which point the private sector was responsible for an estimated 5% of total agricultural extension activities worldwide (Swanson 1990).

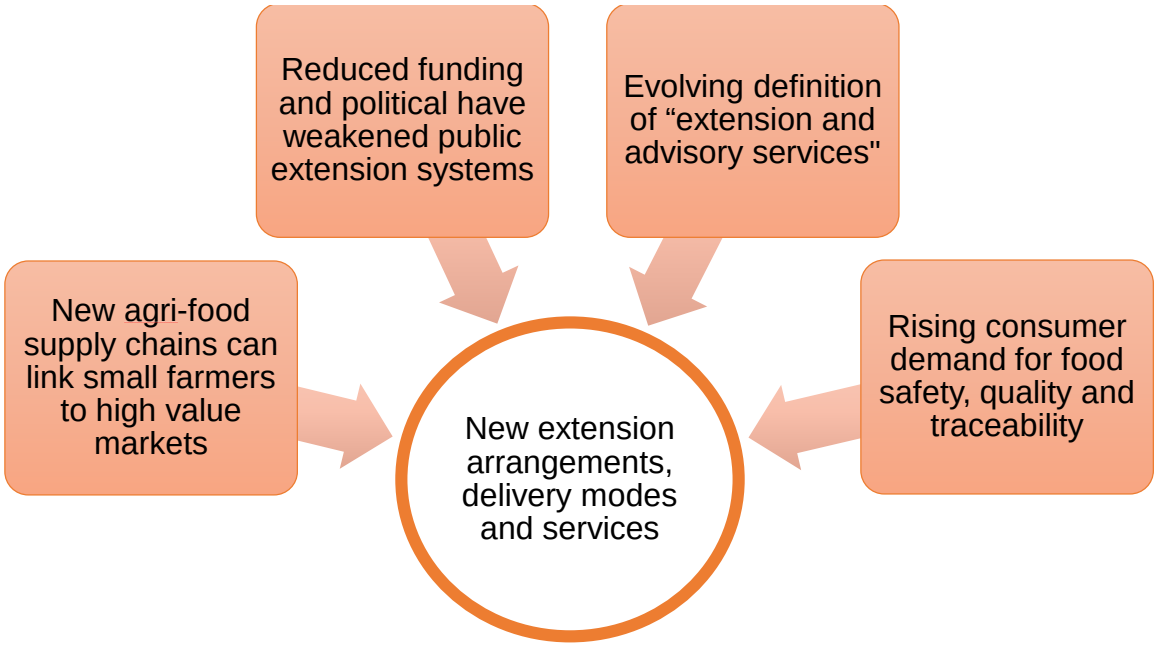

Figure 1. *Global changes in food and agriculture are currently affecting the provision of extension and advisory services to smallholder farmers worldwide.*

Recent case studies present insights from examples of privately-led extension and cross-sectorial coordination among multiple actors (Schwartz 1994; Simpson and Bohn 2014; Macia 2015; Tucker et al. 2015; Sahlaney et al. 2015). However, beyond a framework for institutional arrangements presented by Feder, Birner & Anderson (2011), little work has been done to systematically document the diversity and complexity of emerging private sector extension activities, or to explore their implications for extension delivery and performance. In response to increasing private sector engagement in extension activities, there is a growing need for research that can "refine and elucidate the types of assignments and arrangements that induce the best use of private-sector and public-sector potential in providing extension services while minimizing drawbacks" (Feder, Birner, and Anderson 2011).

Our study uses primary data collected through a survey of private sector extension providers across the developing world to address this knowledge gap in three ways. First, we describe common attributes of emerging extension models led by private organizations that target small farmers. We focus on attributes within four key categories: organizational characteristics, partnership arrangements, extension activities and contextual factors. Recognizing that features of these four categories have great potential to influence one another, we also examine interactions among attributes across categories. Second, we use self-reported performance scores covering a variety of extension outcomes to explore relationships between extension model attributes and indicators of success. Finally, we analyze open-ended questions to identify common themes regarding the mission of private sector extension, keys to success, barriers to success and visions for the future. Based on our findings in these three areas, we identify emerging trends and implications for performance among extension models that involve both private sector actors and small farmers. Earlier studies on this topic include conceptual frameworks that outline conditions for private sector involvement, and case studies that document successes and challenges of specific extension programs (Carney 1995; Feder, Birner, and Anderson 2011; Schwartz 1994; Umali-Deininger 1997). Building upon this previous work, our empirical approach contributes to the extension literature by

comparing features of private sector extension models across regions and agricultural commodities. This work will be of interest to public, private and civil society actors working to advance private sector engagement in extension with positive outcomes for small farmers in developing countries worldwide.

Following the introduction, this paper reviews the existing literature on private sector extension to set the stage for later analysis. It then presents a conceptual framework that classifies attributes of emerging extension models into four categories, and illustrates how these attributes interact to impact performance. Next, it describes the data collection and analysis methodologies before presenting and discussing results. Finally, the conclusion offers key insights to inform program development and policy decisions.

2. Background

This section begins with a discussion of common constraints that small farmers face across the developing world, and then reviews the growing incentives for private sector companies to integrate small farmers into high value domestic and international supply chains. Next, we review concepts of rivalry and excludability and their implications for whether extension services are classified as public versus private goods. We then list and briefly describe different types of private extension providers, and we highlight examples of emerging institutional arrangements that involve private sector actors. Finally, we review the pros and cons of private sector extension models to explore how private actors might address constraints facing small farmers with greater efficiency and impact.

2.1 Small Farms Face Big Constraints

Small farmers in rural areas face numerous constraints to productivity and commercialization that limit net income gains from agriculture. Traditionally, public extension services have sought to address a failure of private markets to deliver information and technical assistance to small farmers. However, small farmers in developing countries are embedded in a web of market failures that extend beyond technical information and production advice (Markelova et al. 2009). These farmers typically face limited access to quality inputs, a lack of formal markets for credit and insurance, and high transaction costs due to poor communication and transportation infrastructure. Uncertain land tenure dramatically increases the risk of long-term investments in farm infrastructure and resource conservation. Institutionalized gender inequality introduces additional inefficiencies for farming households that may further undermine productivity (Udry et al. 1995). Low levels of education among adults in rural areas - including basic literacy and numeracy skills - are a barrier to managing the communication, marketing and accounting functions of a small business. Finally, limited access to health care and other basic human services places additional constraints on human capital and labor productivity in rural areas.

All together, these constraints foster a rural status quo characterized by low levels of investment, low farm productivity and variable product quality. These realities, in turn, limit access to formal markets that enforce high quality standards. The small volume of production per farm further limits the ability of farmers to supply larger retailers, and necessitates coordination through farmer groups, associations or cooperatives. Organizing and managing groups of farmers for shared marketing and sales activities requires additional skills that may be absent in areas with low education and human capital.

While these constraints raise serious concerns about the future of small farms, a strong case can be made that "small farm development is not just desirable for poverty reduction, but also feasible, even in changing circumstances and particularly those of more concentrated supply chains with more demanding buyers" (Wiggins, Kirsten, and Llambí 2010). Small farmers are highly efficient resource users, and their intimate knowledge of local conditions should not be undervalued as a foundation for creative solutions to production problems. Several studies indicate that small farms in developing countries can be more productive on a per-hectare basis than their larger counterparts (Cornia 1985; Eastwood, Lipton, and Newell 2010; Heltberg 1998). A recent United Nations Environmental Program report concludes that "smallholders can be at the forefront of a transformation in world agriculture," but "they need help to overcome market failures and other disincentives for sustainable land use" (UNEP 2013).

2.2 Opportunities and Incentives for Private Sector Engagement

While the public sector has an important and evolving role in the provision of agricultural extension and rural advisory services (Carney 1995), private actors face growing opportunities and incentives to engage with small farmers as suppliers, buyers and service providers. A firm's motivations depend on its location within the value chain. In keeping with supply channel configurations presented in Mentzer et al. (2001), we group private companies into three general types - "suppliers," "buyers" and "supporters" - based on their position in the value chain relative to producers. Suppliers operate upstream of farms, and include companies that sell seed, fertilizer and other production inputs, tools and equipment, as well as the companies that supply those immediate suppliers. Buyers exist downstream of farms, and include any entity that takes possession of an agricultural product between the farm and the end consumer. Buyers include traders, food processing firms, wholesale buyers and sellers, exporters, importers, supermarkets and other retail outlets. Cooperatives that aggregate product from multiple farmers or associations are also considered buyers, as are multinational food and beverage corporations that may control multiple steps in the downstream part of the chain. In contrast, supporters operate alongside the primary value chain, often facilitating links among various actors within the chain. They may provide services that finance or insure business operations, or they may help to transfer products, information or liability from one entity to another. Below we explore the different forces motivating private actors from each of these three categories to engage with small farmers.

Input suppliers in developing economies view small farms as an important market for their products. Input sales depend on farmer demand, and thus the commercial success of small farms over time has great implications for the success of input dealers. Farmer demand for inputs, in turn, depends on farmer knowledge and skills (Kelly, Adesina, and Gordon 2003) and input profitability (Crawford et al. 2003). Some of the factors that impact input profitability, such as transportation infrastructure and other public services that affect transaction costs, are beyond the control of input suppliers. However, input companies are well positioned to provide information and technical assistance to foster productivity and profitability gains for farmers. Public extension has been shown to increase input use and farm profitability (Birkhaeuser, Evenson, and Feder 1991). Similarly, input suppliers that incorporate extension and advisory services into their business model could expect to see increased demand for their products, particularly when "there is a fairly high degree of competition between input suppliers for the same market share" (Schwartz 1994).

On the downstream side, regional buyers, including food processors, cooperatives and exporters, must ensure a reliable supply of agricultural products to meet the demands of their clients (Minot and Hu 2007). These businesses face incentives to provide extension services if farmers are not otherwise able to access the information they need to consistently meet productivity expectations or quality specifications (Schwartz 1994). The motivation for buyers to invest in extension services is enhanced when farmers are compelled by contract to sell their harvest to the company providing advisory support. Without a contract, buyers can discourage side-selling by guaranteeing higher prices, yet this arrangement may be riskier for the buyer (Low 2015, personal communication, April 15, 2015).

Bright and Seville (2010) identify three key incentives for multinational food and beverage companies to integrate small farmers into their value chains. First, sourcing from smallholders can attract and retain consumers. The success of certification programs, including Fair Trade and Rainforest Alliance, suggest that sourcing from small farms adds value to the end product that more and more consumers are seeking.

Second, responsible sourcing practices can help large firms to manage reputational risks. Production practices influence brand image, as consumers increasingly value products that generate social and environmental benefits at the source. Failing to invest in ethical supply chains represents a major risk to brand image for a large firm. Third, small farmers represent "new sources of efficient supply" for global firms (Bright and Seville 2010). Paradoxically, the relatively low yields obtained by many small farms are viewed as an opportunity by industry and development partners, who expect that "on average, smallholder yields can be doubled or tripled through improved knowledge, seed varieties, agricultural inputs and storage" (OXFAM and Unilever 2015). This untapped potential offers an attractive proposition to multinational food and beverage companies that project a rising demand for their products in years to come. Given the volatile nature of agricultural markets, compounded by production risks associated with climate change, small farmers offer an attractive opportunity for supply chain diversification (Bright and Seville 2010).

Organizations that undertake supportive functions for food value chains are also finding reasons to focus on small farmers. Examples include Sustainable Harvest International, a for-profit social enterprise and coffee importer that links small farmers to international buyers through their innovative Relationship Coffee Model. Sustainable Harvest takes a long-term, relationship-centered approach to developing efficiency and reliability in its supply chain, in order to reduce risk for its clients (Sustainable Harvest International 2015b). Similarly, Root Capital supports value chains that integrate small farmers growing coffee and other agricultural products. Root Capital is a nonprofit provider of financial services and training to cooperatives and other organizations that purchase directly from small farmers (Root Capital 2015). Their model responds to demand from socially oriented investors who are eager to support value chains with social and environmental benefits. Both Sustainable Harvest and Root Capital provide capacity-building training and support to cooperatives and other producer groups that deliver extension and advisory services directly to farmers. In fact, Sustainable Harvest staff "work closely with co-op leaders and farmers to train producers on best agricultural practices, risk management, quality assurance and business excellence in an effort to increase farm-level productivity" (Sustainable Harvest International 2015a). These examples illustrate an incentive for organizations that facilitate interactions along food value chains to build capacity among local institutions that source from small farmers. This approach can help value chain supporters to attract and retain clients in high-value markets.

2.3 The Public vs. Private Nature of Agricultural Information

Incentives for private sector organizations to engage in extension activities also depend on the nature of the information or service to be extended. If agricultural information helps farmers to make better production choices and operate with greater efficiency, then both farmers and society as a whole can benefit from improved extension and advisory services. In theory:

> *"There should exist a market for information. However, information on improved agricultural technology is often a public good because the provider of the information cannot exclude other potential users from free access to information provided to one user, and the value of information is not directly affected by the number of users. While many instances of market activities in various aspects of agricultural information are observed... the public good nature of many elements in agricultural knowledge justifies public sector involvement in information provision" (Birkhaeuser, Evenson, and Feder 1991).*

This quote highlights the division of "public" and "private" goods along the lines of rivalry and excludability. Rivalry refers to the diminished utility of a good to one individual after another individual has consumed it. Excludability connotes the degree to which an individual is prevented from utilizing a good without paying for it. Umali-Deininger (1997) classifies extension services according to this framework in order to identify incentives and opportunities for extension provision by private actors (Figure 2).

		Excludability	
		Low	**High**
Rivalry	**Low**	**Public goods** • Nonexcludable agricultural information (LT) • Mass communication of agricultural information	**Toll goods** • Nonexcludable agricultural information (ST) • Excludable agricultural information (Cultural and production practices, farm management, marketing, processing)
	High	**Common-pool goods** • Modern technologies (Self-pollinated seeds (LT)	**Private goods** • Modern technologies (Machinery, chemicals, *hybrid seeds, self-pollinated seeds (ST), biotechnology products, *veterinary supplies and pharmaceuticals)

*Use may involve externalities; ST = short term; LT = long term

Figure 2. Economic Classification of Agricultural Information and Technologies Delivered by the Agricultural Extension System. Taken from Umali-Deininger (1997).

Private firms are best suited to provide private goods, which are characterized by high rivalry and high excludability. In contrast, information tends to receive low rivalry and excludability rankings. Individuals can often apply information without diminishing its value to others, and it is difficult to prevent the diffusion of information free of cost. Thus, private firms face little incentive to provide information and advisory services, unless this activity has direct benefits to the firm's bottom line, or unique circumstances exist that increase the rivalry and/or excludability of the information to be provided. For-profit firms may provide non-excludable information when such activities have a positive, short-term return on investment. For example, input suppliers may offer detailed product information as a component of their marketing efforts, while some buyers "will undertake extension activities when the revenues they realize from a more assured supply, improved timing, and higher quality are greater than their costs of providing the extension information" (Umali-Deininger 1997). However, incentives for private sector participation increase as information becomes more exclusive. For instance, specialized information necessary for

decision-making in commercial, high-tech farming systems is more likely to be provided by private consultants in a fee-for-service model.

2.4 Classifying Institutional Arrangements

Feder, Birner, and Anderson (2011) propose a classification scheme that identifies institutional arrangements based on who takes responsibility for financing and implementation, respectively. Their work illustrates a dozen possible arrangements, with funding coming from the government, individual farmers, the private sector or farmer-based organizations, and implementation provided by government agencies, private sector organizations or farmer-based organizations. Interestingly, this classification system groups private companies and NGOs in the same category, which overlooks significant differences in funding and incentive structures across those two organizational types. Their classification scheme article also acknowledges that farmer-based organizations might participate in developing and awarding government contracts to private sector providers. While their framework is useful for understanding and sorting partnership models, it only begins to express the complexity of arrangements observed in practice. Acknowledging this complexity, Swanson et al. (1997) note that "extension provision is often multi-institutional and organized in ways that are not necessarily independent."

2.5 Emerging Partnership Arrangements & Delivery Models

Our analysis focuses on four organizational types that commonly provide or support private sector extension services. Following Feder, Birner, and Anderson (2011) we consider farmer organizations as a distinct category; yet we also separate commercial (e.g. for-profit) organizations from non-for-profit organizations. We also consider social enterprises, defined as organizations that pursue commercial activities as a means to achieve positive social and environmental outcomes, as a distinct category. Brief descriptions of these organizational types are provided, below, alongside boxes that highlight examples of associated partnership arrangements and delivery models.

I. Commercial Organizations

Input suppliers sell seed, fertilizer and other agricultural supplies and equipment to farmers. They can also act as nodes for information exchange within farm communities. For instance, a single small input supply franchise in rural Zambia might have more than 2,000 individual customers (White 2015). Both international NGOs and large international suppliers have recognized the potential for local input supply companies to provide technical information to farmers as part of a customer-oriented business model and a market-driven development strategy. The success of this model relies heavily on the capacity of local dealers to offer useful production information in conjunction with product sales, so training and support for these suppliers is key.

Large buyers, including food processors and exporters, who source from small farmers may pursue contract farming as a strategy to manage their supply chain. In contract farming arrangements, buyers often provide inputs and technical assistance to increase farm productivity and product quality, particularly in areas where national extension systems fail to meet farmer demand for information. The development implications of contract farming for small farmers have been debated, yet evidence presented by FAO suggest that well-managed arrangements can successfully link small farmers to higher value markets for increased farm profitability (FAO 2001) and lower levels of risk (FAO 1998).

Multinational corporations may provide extension services as part of a global citizenship or corporate social responsibility (CSR) initiative. Over the past decade in particular, extension services funding focused on value chain integration. Multinational corporations have focused on value chain development and have developed a variety of program types that seek to increase the strength, integration, and performance of specific value chains. In particular, corporate sustainability programs that are funded directly by multinational buyers, processors, and manufacturers are designed to increase quality, sustainability, and the strength of sourcing relationships in different countries.

Private consulting firms offer specialized technical information and advice based on farmers' needs. These organizations are responsible for implementing extension activities and services for a wide range of partners. Consultants may be contracted by public agencies, other private actors or farmer-based organizations. In highly commercialized and technical farming systems, private consultants are more common, and individual farmers may hire consultants directly. This arrangement is known as a fee-for-service model.

II. Social Enterprises

Social enterprises focus on smallholder farmers, often the most remote from markets and infrastructure and those farming the smallest plots. Many social enterprises reach out to female farmers and other disadvantaged groups. According to Smith and Darko (2014) areas of focus for social enterprises in the agriculture sector are unique and include providing small-scale infrastructure assets and services; providing quality and low-cost agricultural inputs for low-income farmers; delivering farmer-based extension services to increase crop values and improving market linkages between farmers and buyers; improving efficiency and effectiveness of farmer-based credits for agriculture production; and turning agriculture waste into low-cost production inputs and energy for more sustainable farming. Social enterprises are a separate category in terms of organizations providing extension and advisory services in that they often focus on disadvantaged populations.

III. Non-for-Profit Organizations (NGOs)

Development-oriented NGOs range in scope from small community-based efforts to international agencies, and their funding sources, partnership arrangements and administrative structures vary accordingly. Driven by donor interests, NGOs working in agricultural development today often prioritize poverty reduction, food security, gender equality and capacity building for disadvantaged communities. Limited project-based funding has led to rising interest among NGOs in partnering with private companies to undertake market-based development activities, which may be easier to sustain financially over time. Development NGOs undertake a variety of roles to support broader Agricultural Knowledge Systems (Rivera 2001), including provision and/or funding of extension activities, training and capacity building for extension providers, and evaluation of extension programs.

Although International Research Centers within the CGIAR Consortium are primarily tasked with research rather than extension, they do conduct research on extension, and occasionally incorporate extension services into other research activities. Furthermore, these institutions may offer capacity building and technological assistance to extension providers and programs. Examples from International Center for Tropical Agriculture (ICTA) and the International Potato Center (IPC) illustrate how International Research Centers can support pilot projects to test new extension models and value chain arrangements that link small farmers to high value markets (Thiele et al. 2009; CIP 2007).

IV. Farmer Based Organizations (FBOs)

Farmer associations and cooperatives are membership organizations that may be organized at the local, regional or national level. Larger cooperatives are often made up of multiple regional associations. The FAO distinguishes between resource-oriented cooperatives, which address access to production inputs, and market-oriented cooperatives, typically focused on aggregating and marketing a single commodity, and often targeting high-value markets (Swanson et al. 1997). Market-oriented cooperatives commonly have a dual commercial and social mission whereby marketing activities are intended to bring welfare benefits to their members. Like other upstream entities, cooperatives need to maintain a consistent supply of high quality product in order to access high value markets. Thus, many market-oriented cooperatives offer extension services to their members. Cooperatives may have a team of technical advisors on staff, or may contract with public or private extension service providers. Occasionally, salaried public extension agents are placed within cooperatives to serve the membership. Because they represent the voices of many small farmers, cooperatives and other farmer organizations can play a valuable part in expressing farmer demand and making extension services more demand-driven (Feder, Birner, and Anderson 2011).

National farmer associations are entities that represent and advocate for the interests of farmers. These organizations often have a mixed membership that includes both small and large farms. They frequently focus on a single commodity, and engage in a wide range of activities that include marketing and export activities, farmer coordination, extension provision and even political advocacy.

3. Conceptual Framework

Our conceptual framework outlines how we expect contextual factors, organizational characteristics, partnership arrangements and extension activities to impact each other and to influence the performance of private sector extension models (Figure 3).

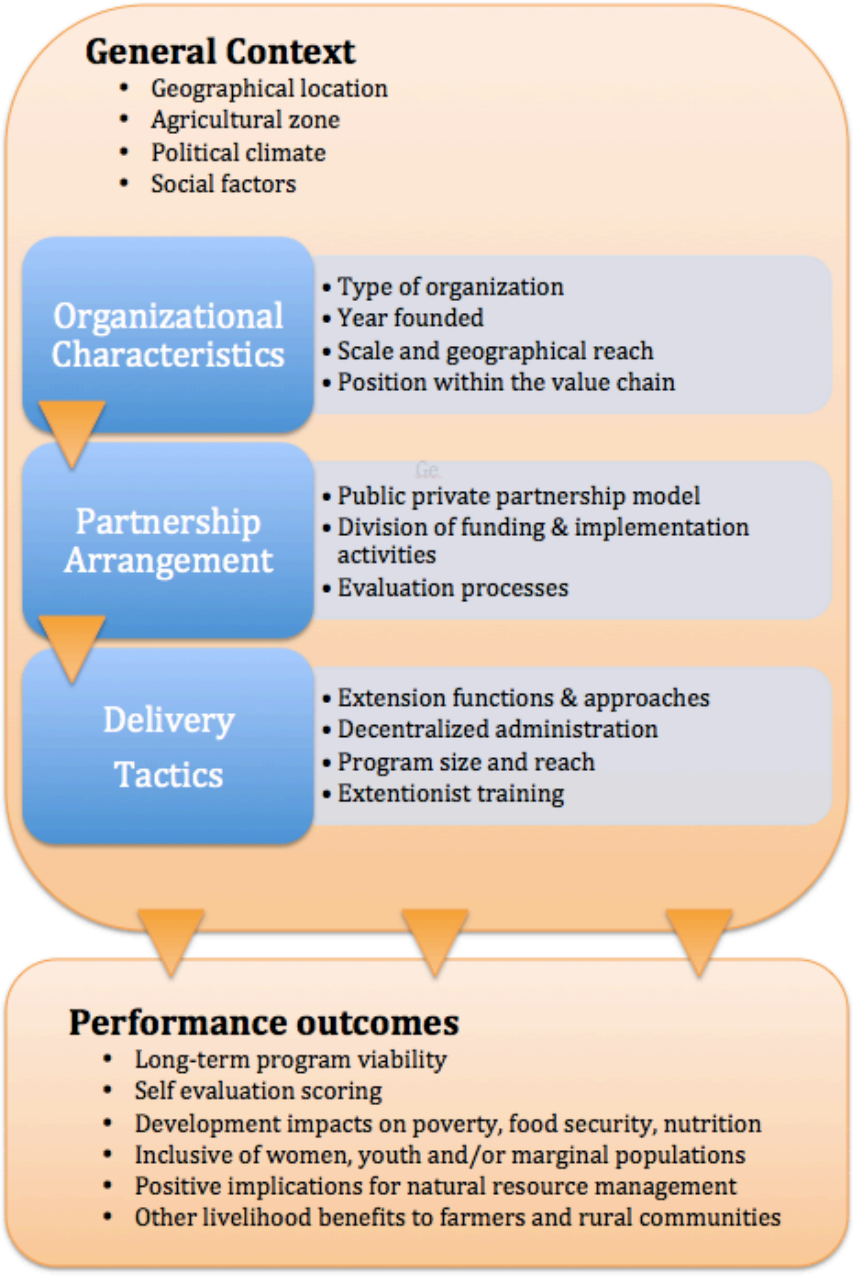

Figure 3. Conceptual Framework.

In positioning these four categories within our model, we consider the relative propensity of one category to influence the others. Organizational characteristics, partnership arrangements and extension activities

are all embedded within a broader set of contextual factors, thus we expect that attributes of the general context are most likely to affect the other three categories. Next, we expect organizational characteristics to impact both partnership arrangements and extension activities, and we expect partnership arrangements to also affect extension activities. Thus, our model suggests a hierarchy in the breadth of impact among the four main categories, with general context having the broadest impact on other categories, and extension activities having the narrowest.

Conversely, if we consider how responsive attributes within each category are to change, we expect ease of change to increase in the reverse order. Thus, extension activities would be the most flexible and easiest to change, followed by partnership arrangements, then organizational characteristics and finally general context. Consequently, our model suggests that as the relative propensity of one category to influence the others increases, the relative permanence of its attributes also increases. Ultimately, our conceptual framework suggests that variation among attributes within each category, in addition to variation among interactions between different categories, can explain variation in performance outcomes. Below we describe each category and introduce key indicators that we use in our analysis.

3.1 General Context

In any given situation, the general context establishes a unique set of opportunities and challenges. Schwartz (1994) lists three contextual factors that help to explain extension performance: (1) the characteristics of the commodity and associated processing industry; (2) the policies, infrastructure and political relations in a given country; and (3) the degree to which the information required by farmers can be characterized as a public good. In our study, key indicators for this category include geographical region, extension coverage, program audience, crop type, and market channel. While it would be fascinating to also consider bioregional classification, agricultural zone, agricultural and extension policies, and extent of social conflict, among others, this study was limited to the contextual attributes, and associated values, listed below.

- **Geographical region:** Africa, Asia and Pacific Islands, Latin America and the Caribbean.
- **Extension coverage:** number of farmers who receive extension and advisory services from participants in our study.
- **Program audience:** under 2 hectares, 2 to 5 hectares, 5 to 10 hectares, over 10 hectares, 1 to 50 livestock, 50 to 300 livestock, over 300 livestock, women, youth.
- **Crop type:** staple crops, high-value crops, horticultural crops, animal products, non-food products.
- **Market channel:** informal local markets, formal domestic markets, formal international markets.

3.2 Organizational Characteristics

Organizational characteristics refer to identifying traits of the private sector entities that engage in extension activities. Key indicators include organizational type (private company, social enterprise, NGO, FBO); scope of extension programs (sub-national, national, international); role within the value chain (supplier, buyer, supporter); and years in operation.

3.3 Partnership Arrangements

Partnership arrangements address how collaborations among multiple organizations are structured. Specifically, key indicators in this category identify which organizations are responsible for what tasks.

Following the classification scheme of Feder, Birner, and Anderson (2011) we focus on which organization, or combination of organizations, undertakes extension program implementation and funding, respectively. We also consider whether or not extension activities are part of a public-private partnership (PPP).

3.4 Extension Activities

Extension activities refer to the mechanisms for delivering extension and advisory services. Within this category we include a range of general extension approaches as key indicators, and we examine their relative importance within an organization's overall extension strategy. Other key indicators include specific extension tactics, communication technologies and extension educator training. Below we list the values recorded in our study for each of these indicators.

- **Extension approaches:** technical assistance, business development, value chain development, financial services, education and empowerment, community development, health and food security, natural resource management, research and technology development and humanitarian relief.
- **Extension tactics:** demonstration plots, lead farmers, provision of inputs, organizing producer groups, information communication technologies (ICTs), business management training, farmer-to-farmer networking, farmer-to-buyer networking, market linkages, participatory research, credit/savings initiatives/other financial services, contract farming and farmer field schools.
- **Communication technologies:** print handouts, mobile phones, radio, print media (newspapers, magazines), internet (blogs, websites), email, social media and television.
- **Extension educator training:** pre-service education level, frequency of ongoing in-service training and relative importance of specific educator skills (agronomy, communication & adult education, business management, natural resource management, community organizing, research, working with marginalized groups).

3.5 Performance Outcomes

In order to understand extension performance, it helps to know something about the objectives of extension programs and the means by which they are evaluated. Thus, we consider extension objectives and evaluation processes in addition to performance scores as key indicators of performance.

- **Extension objectives:** increase productivity, reliable supply of agricultural product, increase product quality, increase market access, promote technology adoption, improve farmer livelihoods, improve business management, improve environmental management, reduce poverty, promote climate change adaptation, improve conditions for marginalized groups
- **Evaluation Process:** formal vs. informal evaluation, internal vs. external evaluation, does evaluation process include farmer feedback.
- **Performance Scores:** for each relevant objective, respondents rate their own performance on a scale from one to five.

3.5 Open-Ended Questions

The survey instrument included 5 open-ended questions and 2 statements to collect qualitative information from the respondents related to key areas of the investigation of privately-led extension and

advisory service models for smallholder farmers and their families. This section will summarize these responses and categorize the most repeated themes to each of these questions. The following section will identify the section of the survey, the survey question and a summary of the responses of the most repeated themes to each of these questions. Seventy-eight organizations provided open-ended responses in the study.

The themes identified in response to the open-ended questions and statements were not ranked or prioritized. Rather these themes are descriptive of the sum total of responses. As is the case with the responses of the quantitative survey questions, it should be noted that the Extension and Advisory Services (EAS) model described in response to the open-ended questions is multi-faceted in its functions, diverse in its purposes, often pluralistic in nature and characterized by various degrees of involvement of a public-private partnership.

There were three sections of the survey where open-ended questions were included: Extension Activities; Best Practices; and, Final Thoughts. In the section entitled Extension Activities there was an open-ended statement rather than a question as was the case in the section entitled *Final Thoughts.* There were five open-ended questions in the Best Practices section. Below is the order that the open-ended questions/statements appeared, the name of the section of the survey and the text of the 7 open-ended questions/statements.

Extension Activities Section

In your own words, please describe the overall goal or mission of your agricultural extension services.

Best Practices Section

Keys to Success

Based on your experience, what are two or three key elements of successful extension programs?

Barriers to Success

Based on your experience, what are two or three shortcomings of current extension programs?

Future Opportunities

Where do you see opportunities for growth and future development of extension activities?

Scaling Up

Which of your extension programs could be successfully replicated in other communities? What recommendations would you have for successfully scaling-up your extension programs?

Financial Sustainability

How can extension programs be sustained financially over time? What are your strategies for making extension affordable and cost-effective?

Final Thoughts Section:

Please share any additional thoughts or information about your model for extension services that will help us to understand its strengths, challenges, opportunities and the potential for future impact.

4. Methods

4.1 Survey Design

Data were collected using a survey questionnaire with both close-ended and open-ended questions, informed by our conceptual framework and literature review. Several Cornell faculty members with experience conducting research on agricultural extension reviewed the questionnaire. Their feedback was incorporated and the final English version of the questionnaire was translated into Spanish and French. The survey included sections on organizational structure, partnership arrangements, extension activities and scope, objectives and outcomes, funding sources and best practices. The full survey questionnaire is included in Appendix I.

4.2 Data Collection

Survey respondents completed surveys between March 2015 and June 2015. Our respondents included a wide range of private sector organizations engaged in extension activities targeting small farmers in developing countries. Our research team directly contacted over 300 potential respondents. Several of our colleagues shared the survey with extension providers in their networks, resulting in over 100 additional direct invitations to participate. Furthermore, we posted the survey questionnaire on the MEAS and GFRAS websites, accompanied by information about the project and instructions on how to participate.

5. Results

5.1 General Context

We received survey responses from 101 different organizations engaged in extension activities in 42 countries. The extension and advisory services that these organizations provide reach more than 3.3 million farmers worldwide. Responses from organizations working in Africa made up 72% of our sample, followed by the Latin America and Caribbean region (17%) and the Asia and Pacific Islands region (9%) (Figure 4). Similarly, total coverage by organizations in our sample is highest in Africa, where extension services reach almost 1,850,000 farmers, followed by Latin America and the Caribbean, where our respondents serve almost 950,000 farmers. In Asia and the Pacific Islands, organizations in our sample provide extension and advisory services to more than 550,000 farmers (Figure 5). Thus, although extension providers operating in Africa may be overrepresented in our study, respondents from Latin America and Asia reach a significant number of farmers.

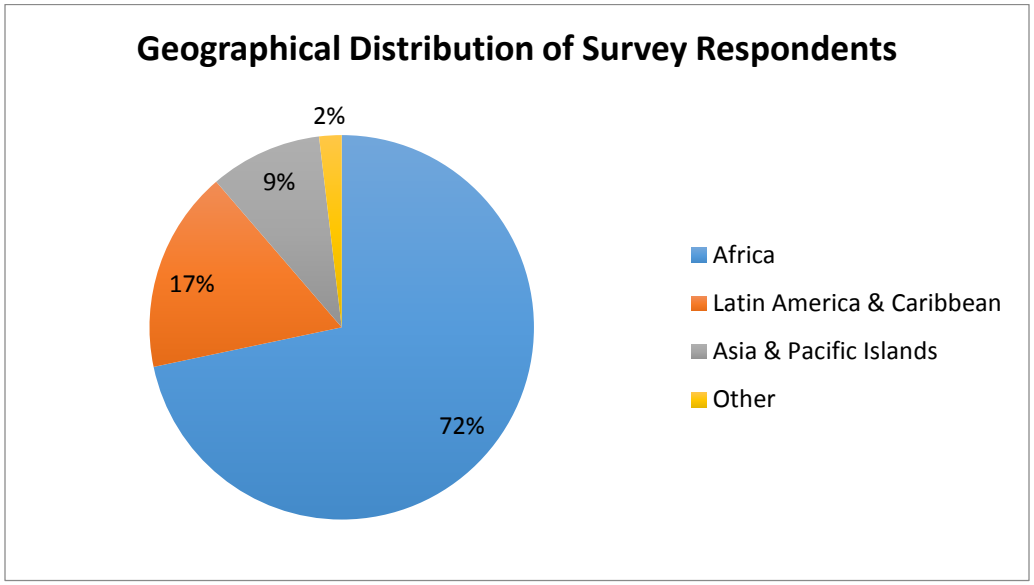

Figure 4. Geographical Distribution of Survey Respondents.

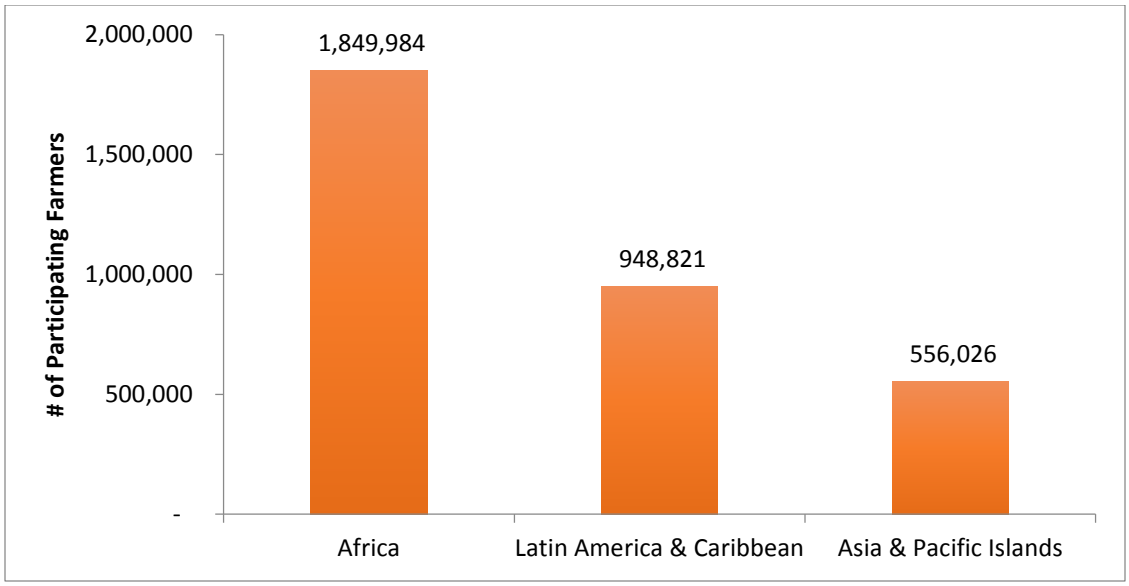

Figure 5. Extension Coverage by Region.

Survey respondents target their services to farmers representing a range of different audiences (Figure 6). Most of the organizations in our sample (84%) address the needs of farmers with less than 2 hectares of land, and many (67%) also serve farmers with 2 to 5 hectares of land. Some extension providers also target farmers with larger landholdings: 40% serve farmers with 5 to 10 hectares of land, while 36% serve farmers with more than 10 hectares. Some extension providers explicitly address the extension needs of specific demographic groups: 43% target women farmers, while 38% target youth.

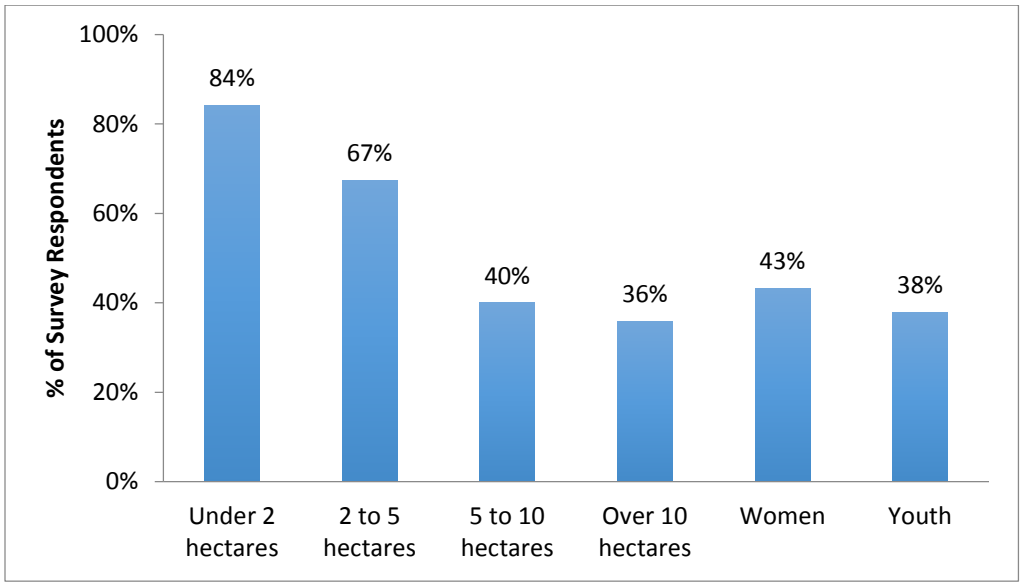

Figure 6. Target Audience.

Figure 7 shows the percent target farm size by region. In Asia, all organizations target the smaller farmers (with less than 2 hectares), while 80% of African programs target farmers with less than 2 hectares. Asia extension and advisory services tend to focus on all farm sizes in comparison to Latin America and Africa. Overall extension efforts in all regions tend to focus on farms that are 5 hectares or less. Extension initiatives also exhibit certain similarities and differences regarding the targeted demographic groups. For example, women are targeted by nearly 40% of responses in all regions, although in Africa this demographic group is slightly higher than targeted groups in Latin America and Asia. Young farmers, for the most part, tend to be targeted in higher proportion in Asia (56%) than in Latin America (42%) and Africa (37%). Overall, Figures 7 and 8 suggest that targeting women and the youth is an important component of privately-led extension efforts worldwide.

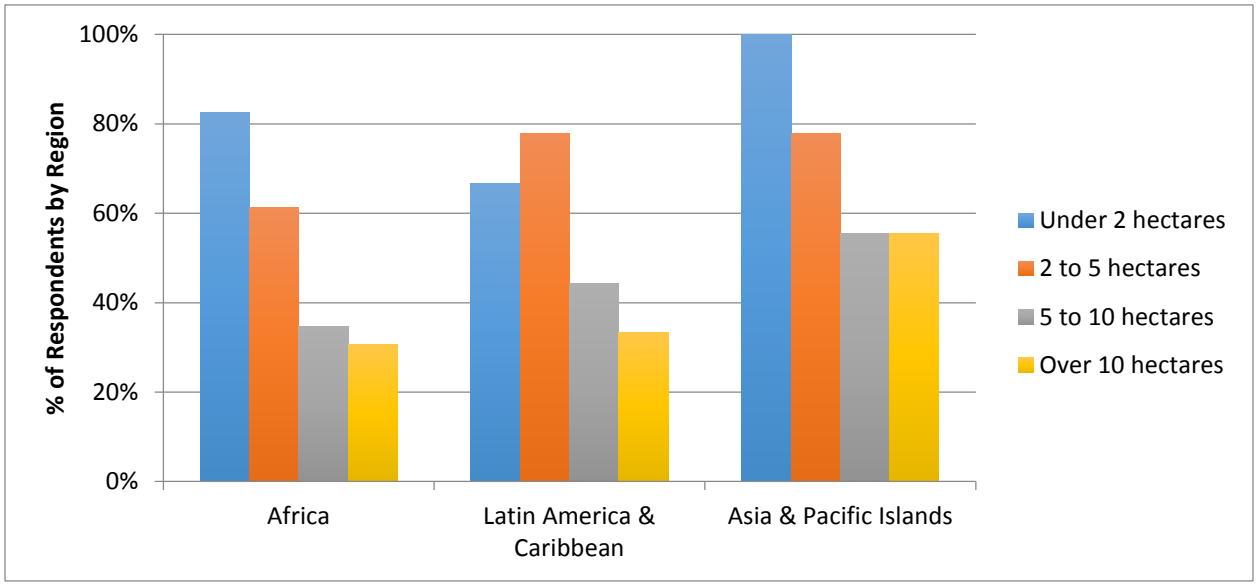

Figure 7. Target Farm Size by Region

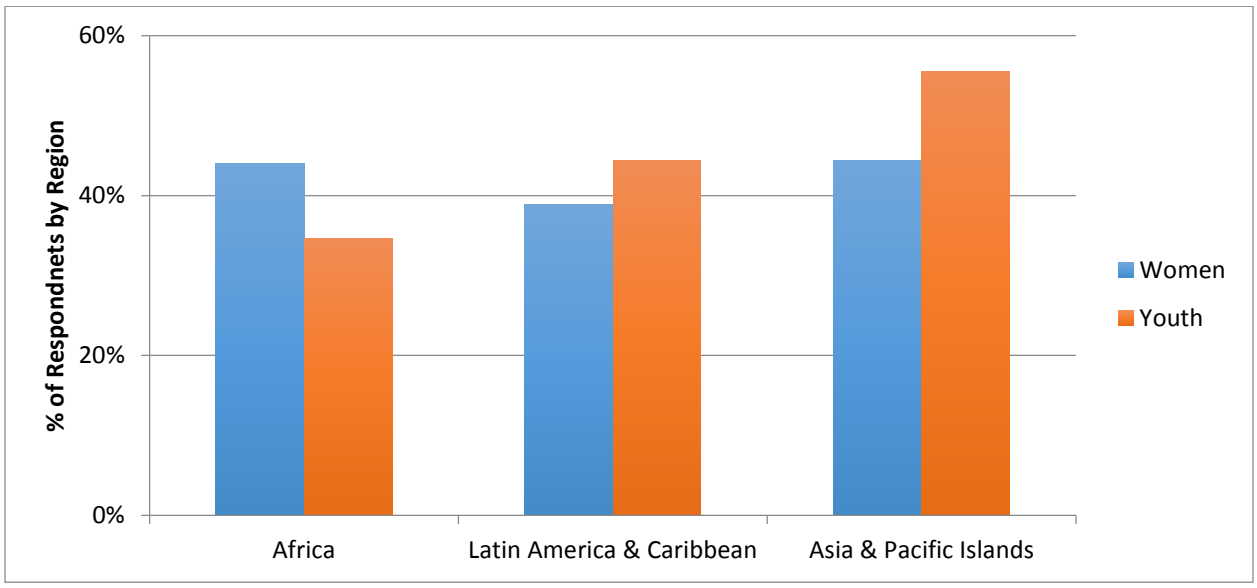

Figure 8. Target Demographics by Region.

Our sample includes organizations that focus on a wide range of agricultural products. In our analysis, we group agricultural products into five different product types: staple crops, horticultural crops, high value crops, animal products and non-food products (Figure 9). Staple crops are the highest priority for organizations in our sample, as 54% of respondents focus on grains, starchy tubers or oils. Horticulture crops are next in importance, as 48% of respondents provide extension for fruits, vegetables or flowers. 21% of respondents focus on animal products, which include meat, dairy and fish, while 18% focus on high value crops, which include coffee, tea, cocoa, honey, nuts and spice. Finally, 14% of respondents offer extension for non-food products, which include timber, cotton, wool, tobacco and animal fodder. Most of our respondents specialize in a single product type, however 38% provide extension services for 2 or more product types. Figure 10 suggests differences between regions. Specifically, privately-led initiatives in Africa overwhelmingly emphasize staple crops and high values crops. In contrast, animal products are the primary focus of initiatives in Asia, while Latin American programs tend to emphasize staple crops only.

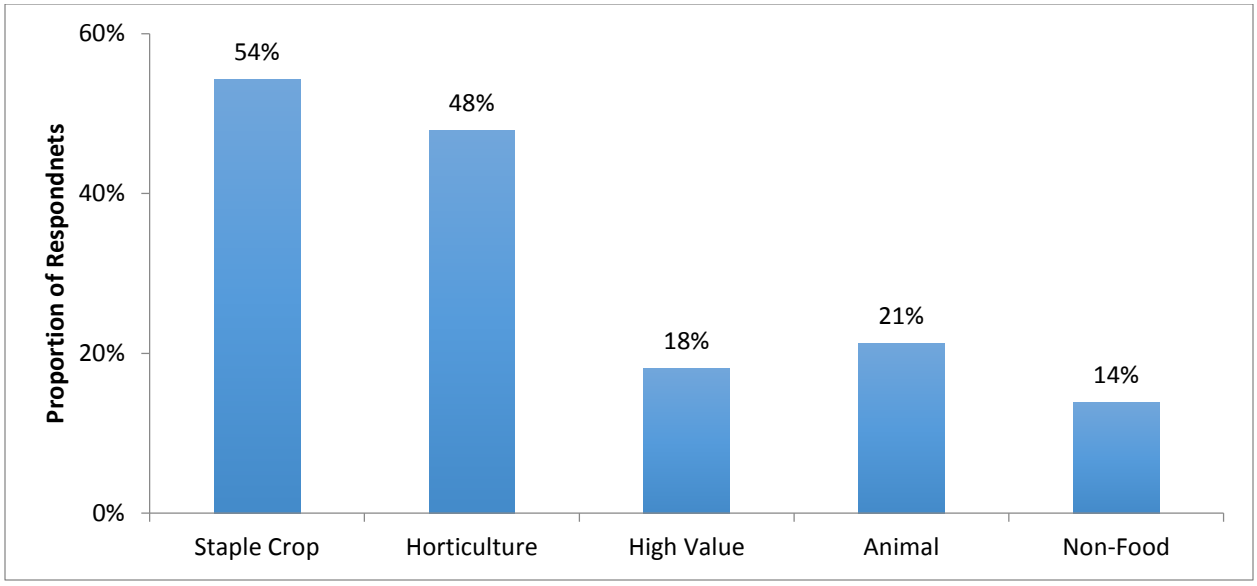

Figure 9. Product Focus of Extension Programs. Staple crops include grains, starches and oils. Horticulture crops include fruits, vegetables and flowers. High value crops include coffee, tea, cocoa, honey, nuts and spices. Animal products include dairy, meat and fish. Non-food products include timber, cotton, wool, tobacco and animal fodder.

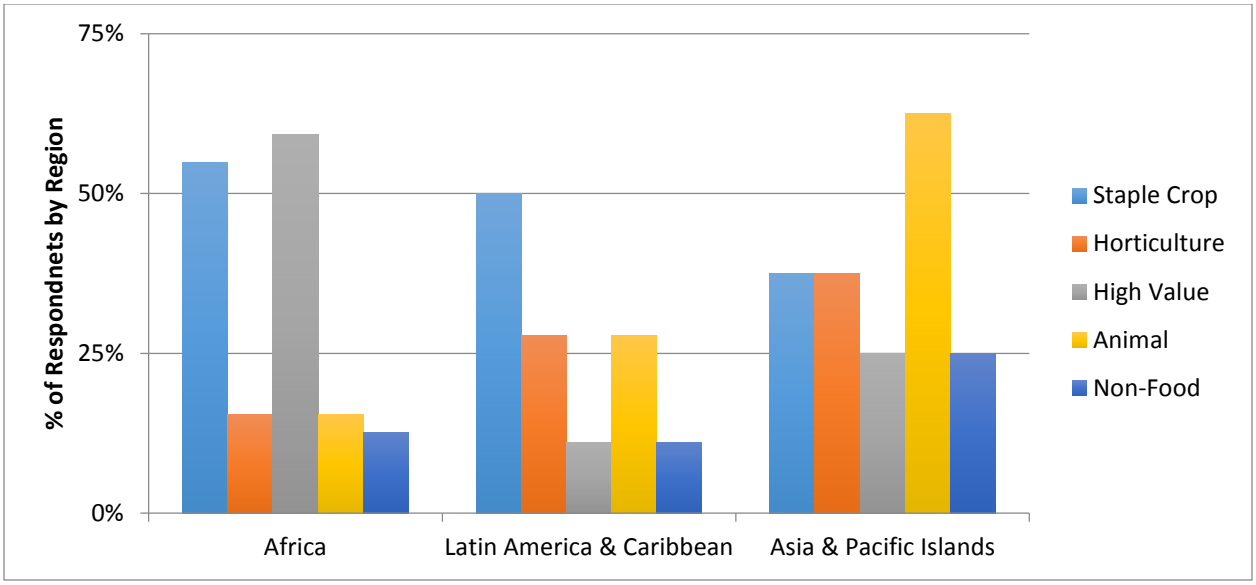

Figure 10. Product Focus by Region.

Extension providers in our sample serve farmers whose products are destined for local, domestic and international markets. In our study, local markets are synonymous with informal markets (wet markets), close to the point of production and subject to few regulatory or quality standards (Figure 11). We include subsistence farmers producing food for consumption by their own households in the local markets category. In contrast, domestic and international markets imply a more formalized market structure that demands higher quality and phytosanitary standards, which often require advanced production and post-harvest handling techniques. In our sample, just 3% percent of respondents focused exclusively on farmers producing for local markets, however 54% of respondents included farmers producing for local markets in their extension programming. Almost all of our respondents (97%) targeted farmers producing for formal markets: 94% of respondents provided services to farmers growing for domestic markets, while 52% served farmers producing for international markets. Figure 12 presents information of market channels by region. Contrary to common beliefs that most extension efforts try to link farmers to international markets, the primary channel for extension work in all regions is the domestic market (Figure 12). This is the result of risks associated to international markets and increased incomes in urban areas of developing countries (Gómez et al. 2013).

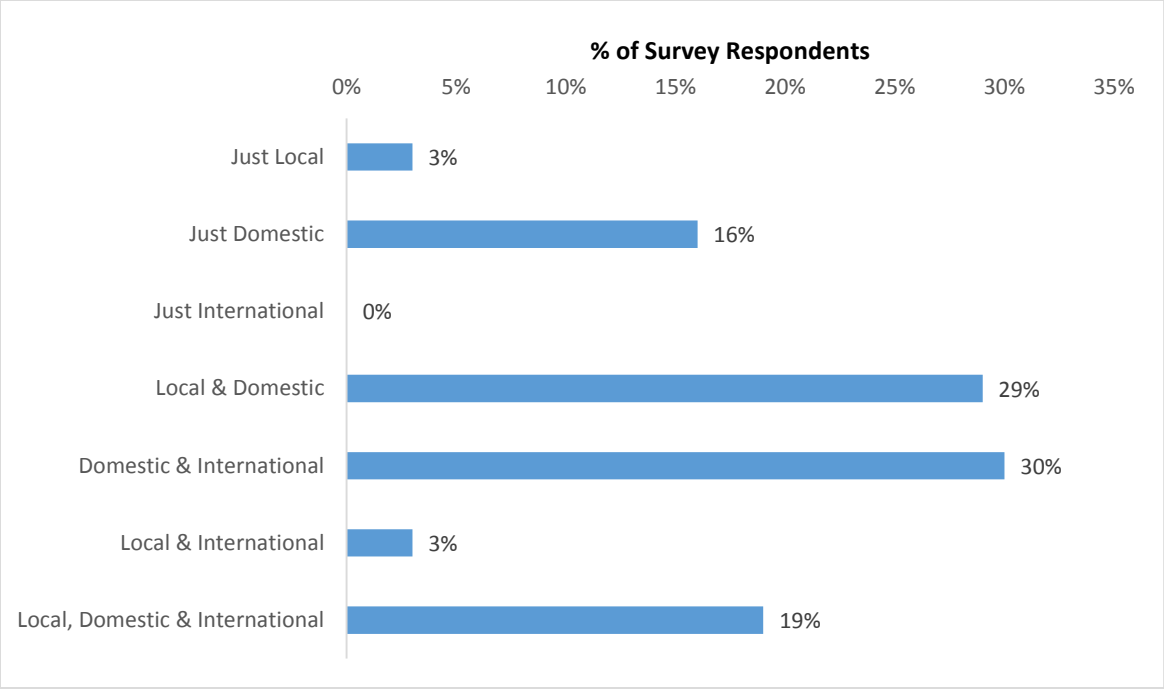

Figure 11. Market Channel Focus.

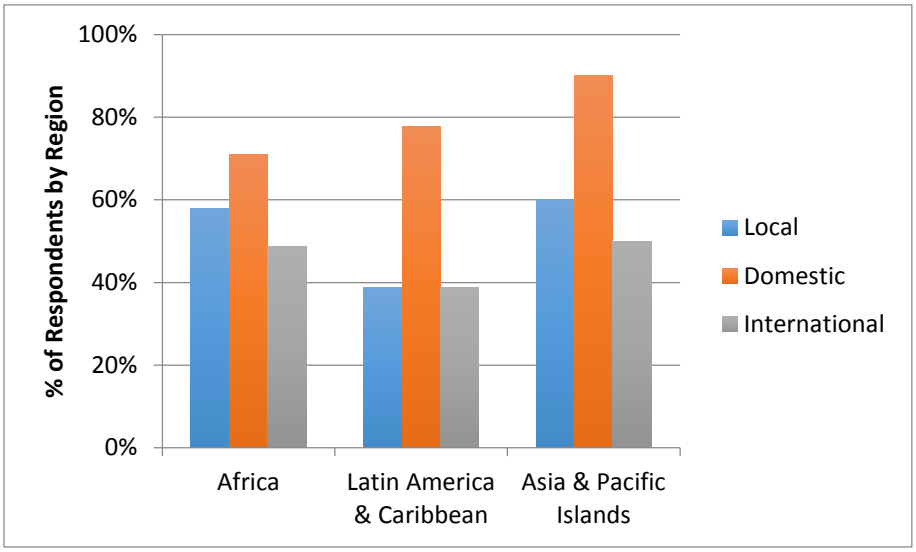

Figure 12. Market Channel by Region.

5.2 Organizational Characteristics

We characterize organizations in our sample according to organizational type, organizational scope, role within agricultural value chains and age of the organization. After presenting results for each of these categories, we consider interactions between organizational type and each of the other three categories. We also examine relationships between organizational characteristics and several general context attributes.

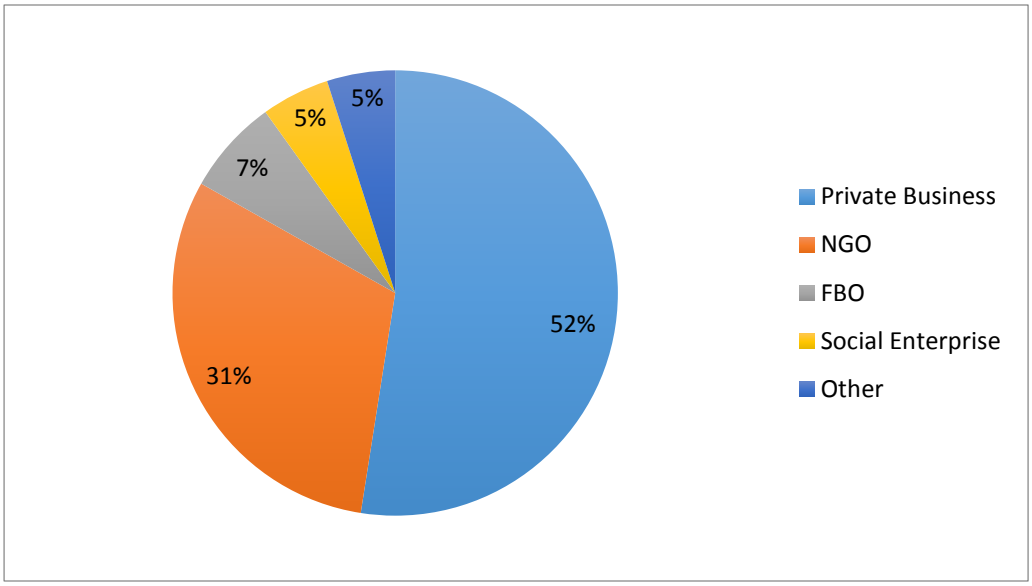

Figure 13. Organizational Type.

Most of our survey participants are private sector organizations classified as private businesses (52%) or non-for-profit organizations (NGOs) (31%). Our sample also included farmer-based organizations (FBOs) (7%), social enterprises (5%), international research centers (3%) and public agencies involved in public-private partnerships (2%) (Figure 13). If we consider organizational type by region, we find that the majority of respondents from Asia and Africa are private businesses (70% and 58%, respectively), yet less than a quarter of respondents from Latin America (22%) are private businesses (Figure 14). Latin America had the greatest proportion of NGOs among respondents (56%) followed by Africa (29%), while Asia had none. However, Asia had the greatest response rate of FBOs (20%), followed by Latin America (11%) and Africa (4%).

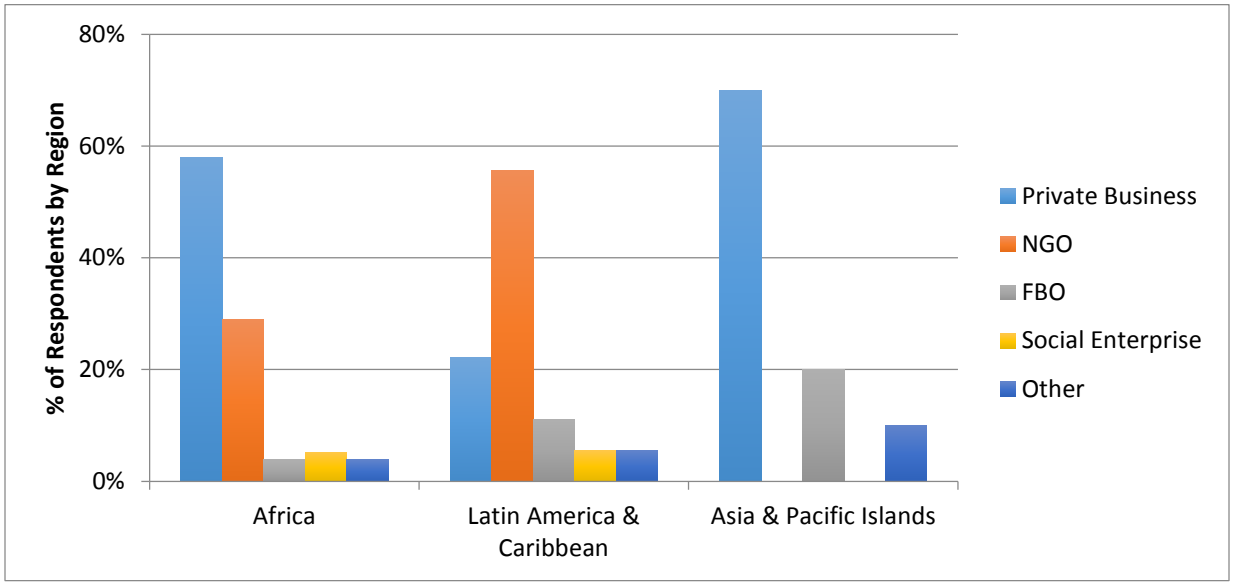

Figure 14. Organizational Type by Region.

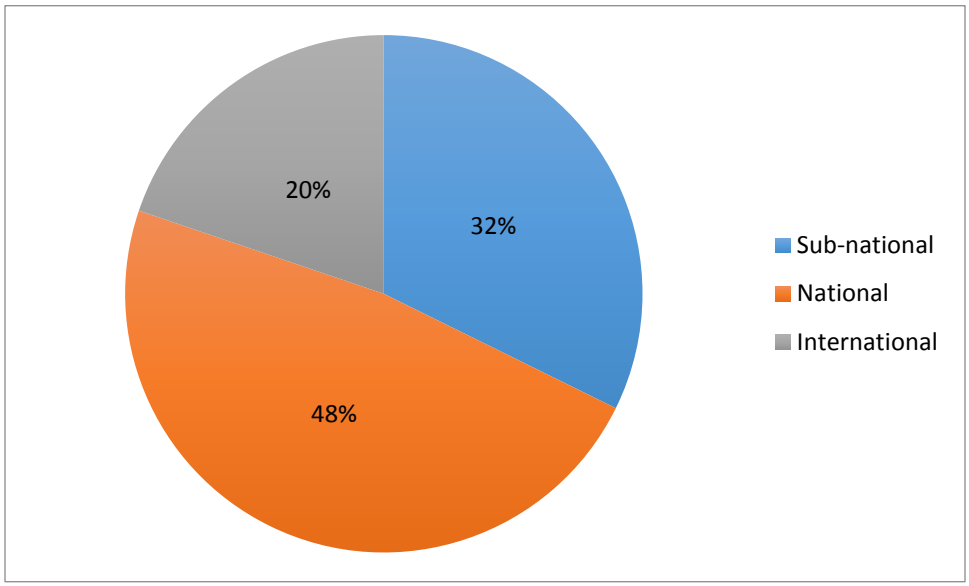

Figure 15. Organizational Scope.

In terms of organizational scope, 48% of respondents operate at the national level, which means they work in multiple regions of a single country. 32% of respondents work at the sub-national level, as their work is limited to a single region within one country. The remaining 20% of respondents operate in two or more countries, and are thus considered international in scope (Figure 15). In considering organizational scope by region, we observe that organizations working at the national level are the most frequent in every region. In our sample of African extension providers, organizations working at the sub-national level are more prevalent than international organizations, while the reverse is true for our samples from Latin America and Asia (Figure 16). In considering organizational scope by organizational type, we observe that private businesses/social enterprises are most likely to operate at the subnational level (41%) followed by NGOs (24%) and FBOs (17%). In contrast, FBOs are far more likely to operate at the national level (83%) than either private businesses/social enterprises (48%) or NGOs (41%). Finally, NGO's are most likely to operate at the international level (34%) followed by private businesses/social enterprises (11%); none of the FBOs in our sample operate in multiple countries (Figure 17).

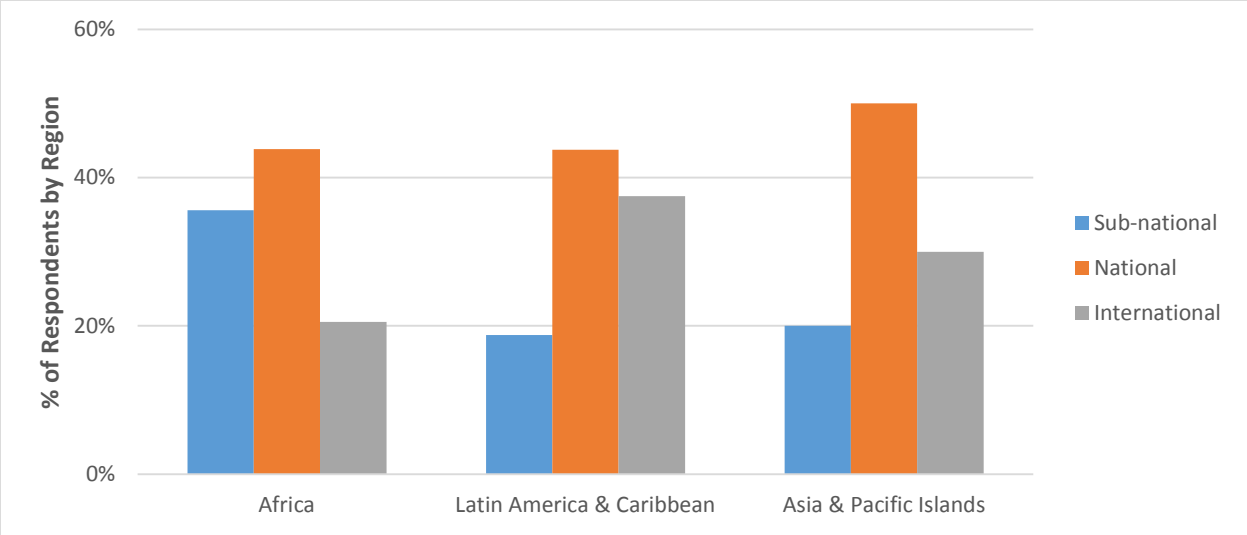

Figure 15. Organizational Scope by Region. Sub-national organizations work within a single region of one country; national organizations operate within multiple regions of a single country; international organizations work in two or more countries.

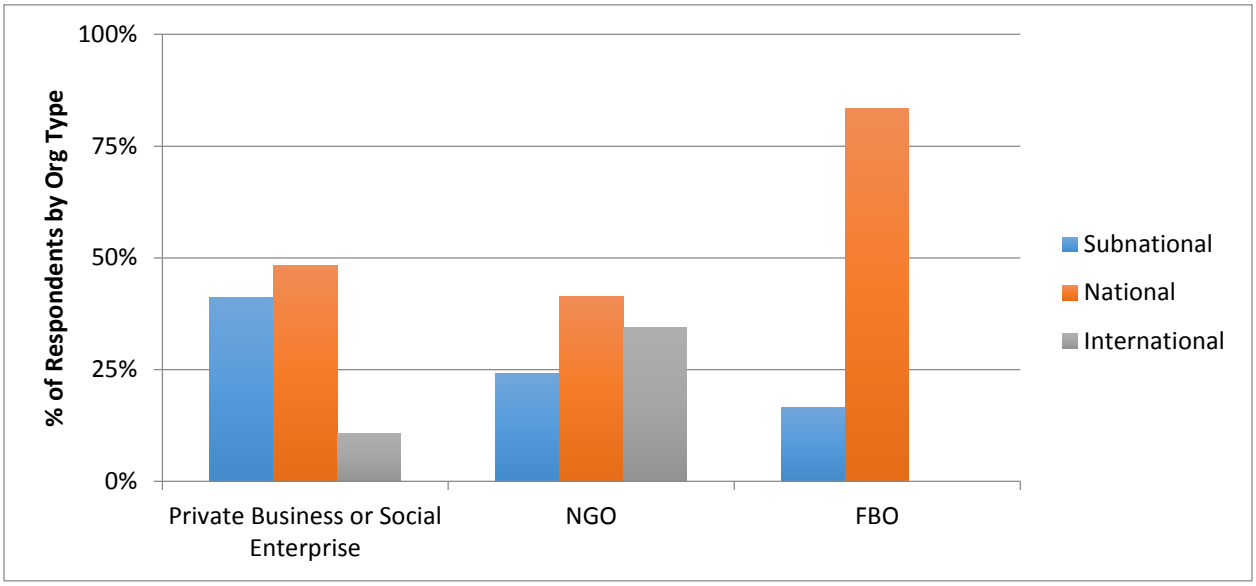

Figure 16. Organizational Scope by Organizational Type.

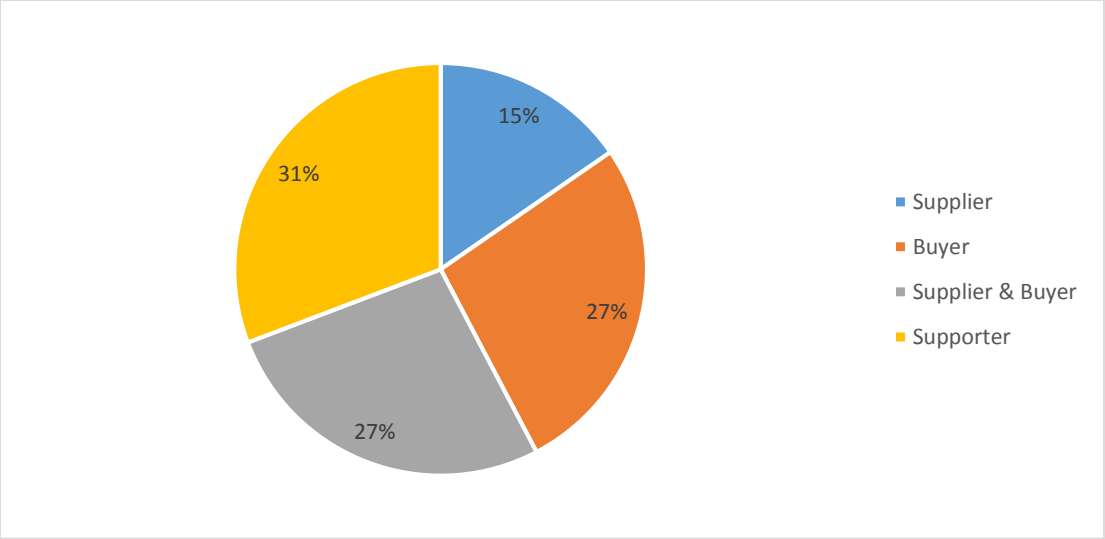

Figure 17. Value Chain Role.

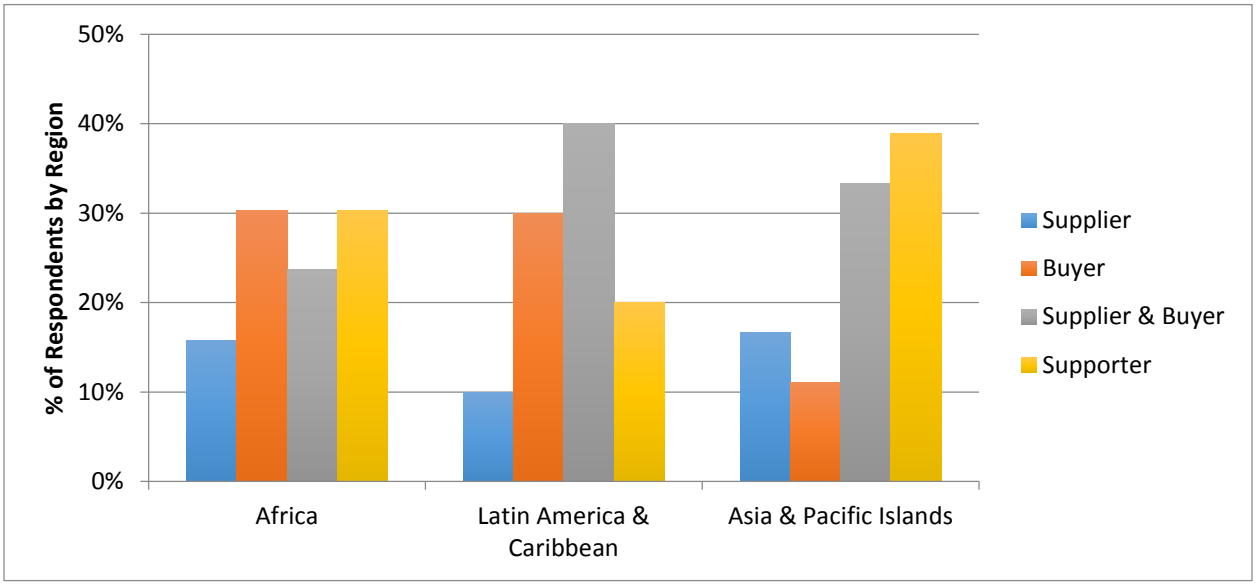

Figure 18. Value Chain Role by Region.

We classify each organization based on its role within agricultural value chains, following the typology presented earlier from Mentzer et al. (2001). In total, 42% of respondents are suppliers, while 54% of respondents are buyers. However, these two categories are not mutually exclusive, as 27% of respondents in our sample act as both supplier and buyer. The remaining 31% of respondents support the value chain with other services (Figure 17). In considering value chain role by region, organizations that act exclusively as suppliers are best represented in Asia (17%), followed by Africa (16%), then Latin America (10%); while organizations that act exclusively as buyers are best represented in Africa (30%) and Latin America (30%),

followed by Asia (11%). Latin America has the highest percentage of organizations working as both supplier and buyer (40%), followed by Asia (33%), then Africa (24%). Finally, organizations that exclusively undertake a supportive role in the value chain are relatively most abundant in Asia (39%), followed by Africa (30%) and then Latin America (20%) (Figure 18). We also consider value chain roles in relationship to organizational type. In our sample, NGOs and FBOs are more likely to take on the role of supplier, supplier and buyer or supporter, while private businesses and social enterprises are more likely to take on the role of buyer alone (Figure 19).

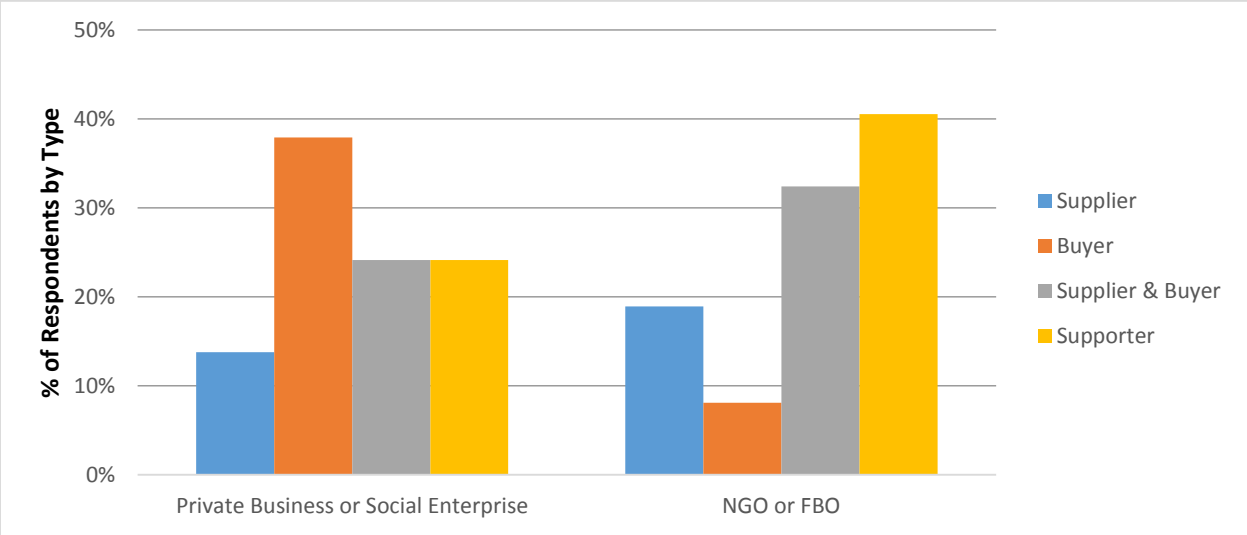

Figure 19. Value Chain Role by Organizational Type.

In terms of extension coverage by organizational type, FBOs and NGOs have the highest coverage rate, 33% and 32% respectively. Following these two is the private business, which has a relative lower coverage rate of 21%. Social enterprises is the least covered by extension services, with a coverage rate of 9% (Figure 21). In our sample, 31% of the respondents are NGOs, which is comparable to the real extension coverage (32%) of this type. More than half (52%) of the respondents in our survey are private businesses, which is much higher than the real coverage (21%). In contrast, there are less FBOs in our sample (7%), compared with the real coverage rate of 33%. The percentage of social enterprise respondents is 5% in our sample, which is a little less than the coverage rate (9%).

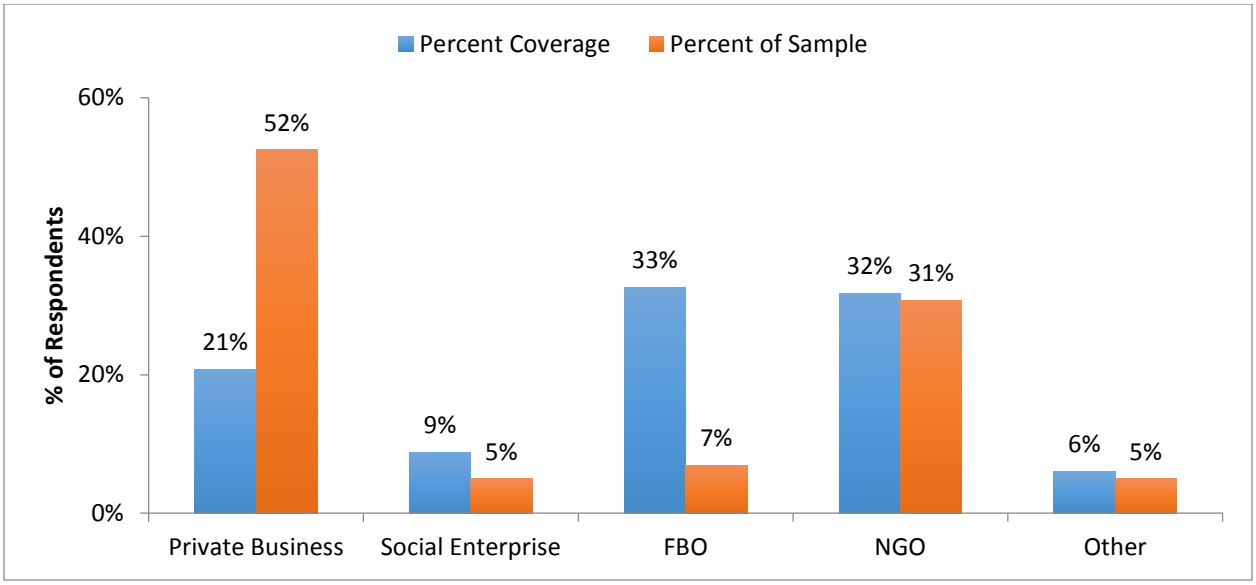

Figure 21. *Coverage by Organizational Type.* This figure illustrates percent coverage for each organizational type, alongside the relative frequency of that type in our sample.

Survey respondents of the four organizational types are targeting their services to farmers with different sizes of farms (Figure 22). Farmers with smaller landholdings (less than 2 hectares of land and 2 to 5 hectares) are the primary targets of all four organization types. Social enterprises are mostly likely to target farmers with less than 2 hectares of land (close to 100%), followed by private businesses (88%), FBOs (86%), and NGOs (about 72%). As for farmers with 2 to 5 hectares of land, the coverage rate for all four types of organizations is between 60% and 71%. Except for social enterprises, all the other three types of organizations are serving farmers with larger landholdings (5 to 10 hectares and over 10 hectares). About 50% of the private business respondents are targeting farmers with 5 to 10 hectares of land. The coverage rates of farmers with the same size are around 30% for NGOs and FBOs. The coverage rates of large landholding farmers (over 10 hectares) are similar for private businesses, NGOs, and FBOs, all at around 35%. Different organizations are also serving the needs of specific demographic groups differently. Social enterprise respondents are targeting more on women (60%), while the other three types are targeting less (around 40%). All four types of organizations are having similar coverage rate for youth, at around 40%.

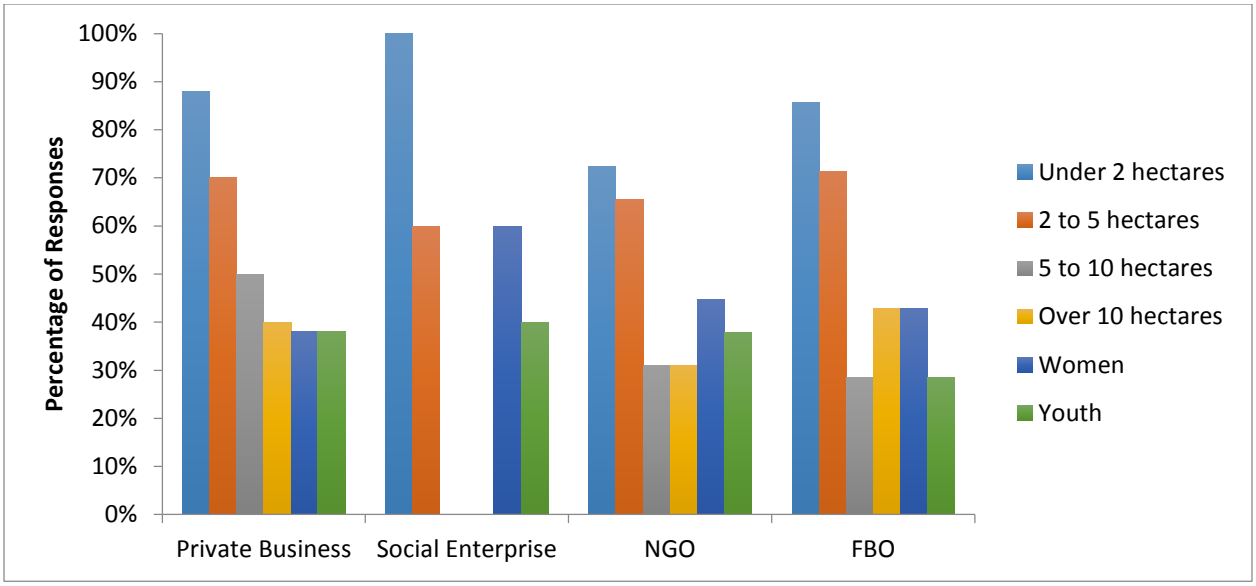

Figure 22. Target Audience by Organizational Type.

Figure 23 shows the product focus by organization type. Staple and horticultural products are the focus of private businesses and social enterprises, as 55% of these respondents provide extension for horticulture crops and 46% of them focus on staple crops. Only 13% or 14% of these respondents are focusing on other products such as high value crops, animal products and non-food products. NGOs are focusing the most on staple products (65%), and less on horticulture crops (39%), animal products (26%) and high value products (19%) and the least on non-food products (13%). FBOs have a different product focus, compared with all the other three types of organizations. Their top priority is animal products, 57% of the respondents with this type provide extension service. High value products (29%) and horticulture crops (29%) are the focus of some FBOs. Only 14% of the FBO respondents are offering service for staple products, the number is similar to non-food products.

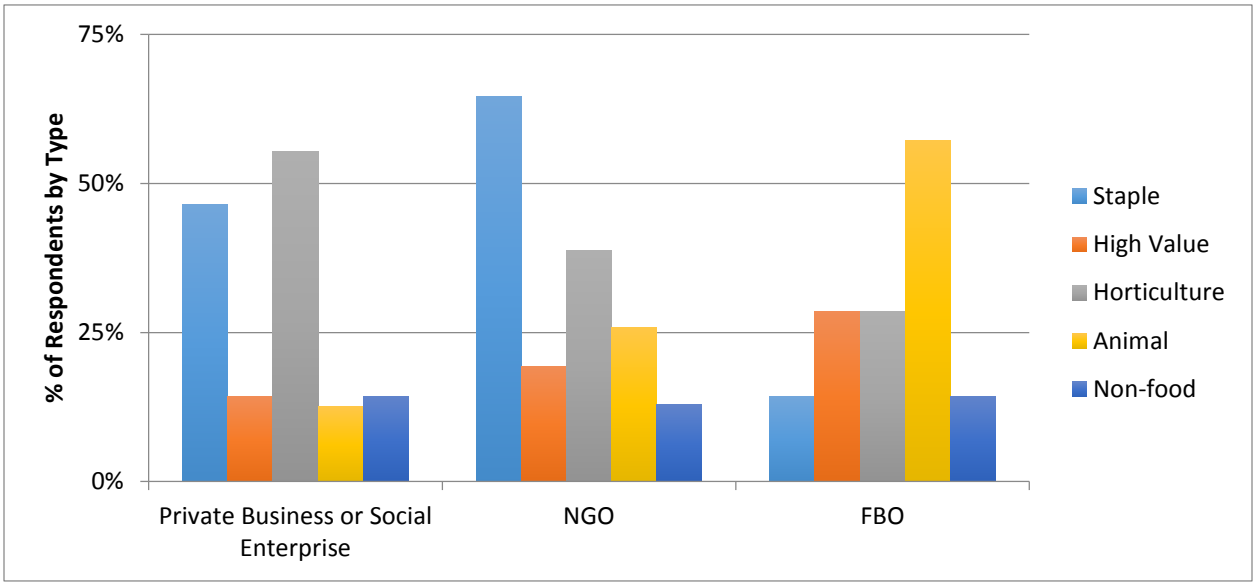

Figure 23. Product Focus by Organization Type.

The market channel for different organization types also varies (Figure 24). In our study, private business and social enterprises are marketing mainly (74%) through a domestic channel. About 50% of them target farmers producing for local markets and 48% for international markets. Similarly, NGOs are also primarily (77%) focusing on domestic markets but local markets is also an important channel (65%). Similar to private businesses and social enterprises, NGOs are also less interested in the international markets (45%). In contrast to the other three types of organizations, FBOs target mostly on farmers producing for international markets (71%) and less for local and domestic markets (43%).

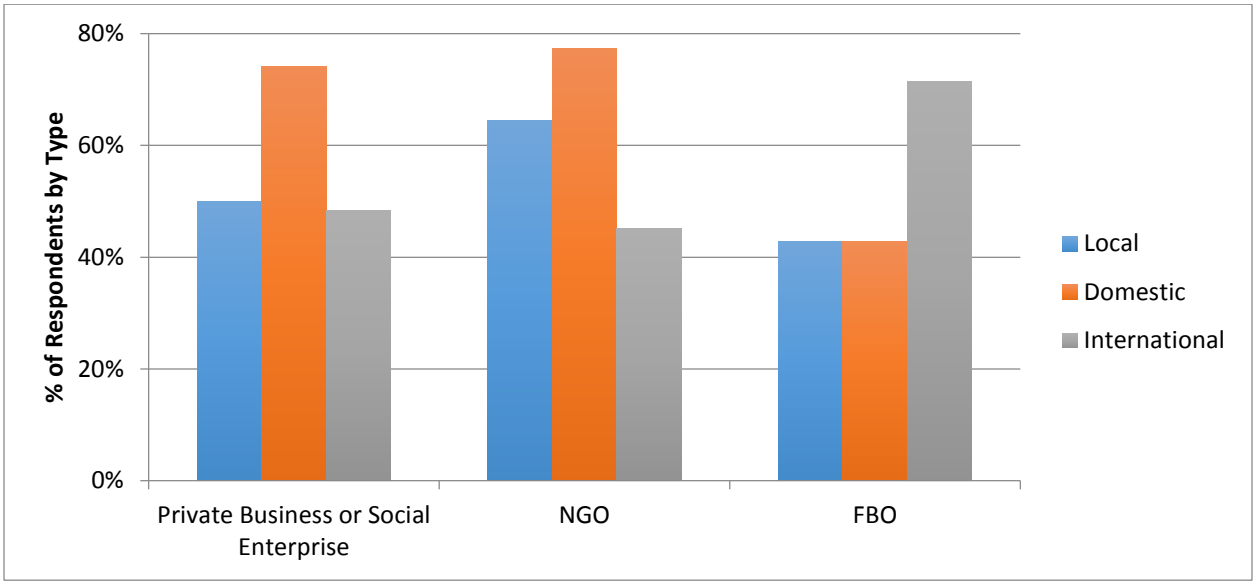

Figure 24. Market Channel by Organization Type.

5.3 Partnership Arrangements

We characterize partnership arrangements in our sample according to region, organizational type, and relative frequency of funding sources. After presenting results for each of these categories, we also consider extension program implementation and funding.

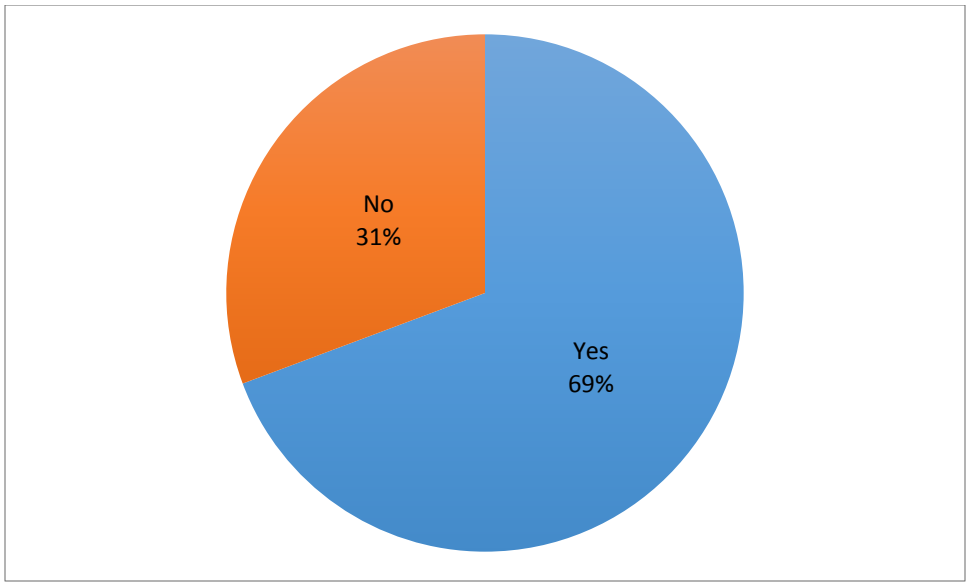

Figure 25. Public-Private Partnerships (PPPs)

Most (69%) of our survey respondents claim their extension activities are part of a public-private partnership (PPP) (Figure 25). Figure 26 suggests differences between regions. Specifically, African programs are most involved with PPPs, 74% of the African respondents say yes when asked whether they are part of a PPP. The number is 67% for Latin American and Caribbean respondents. When it comes to respondents of Asia and Pacific Islands, half of them are part of PPPs and the other half not.

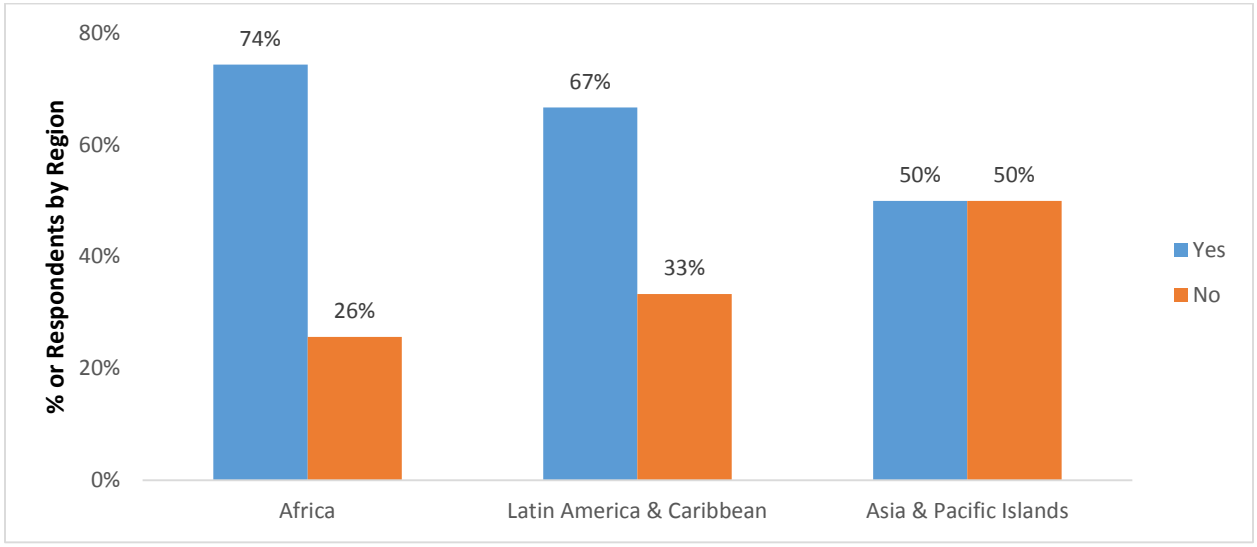

Figure 26. Public-Private Partnerships by Region.

Figure 27 shows the portion of respondents involved with PPPs by their organization type. Social enterprises are most involved with PPPs (80%), followed by NGOs (77%) and FBOs (71%), while only 62% of private business respondents are part of a PPP.

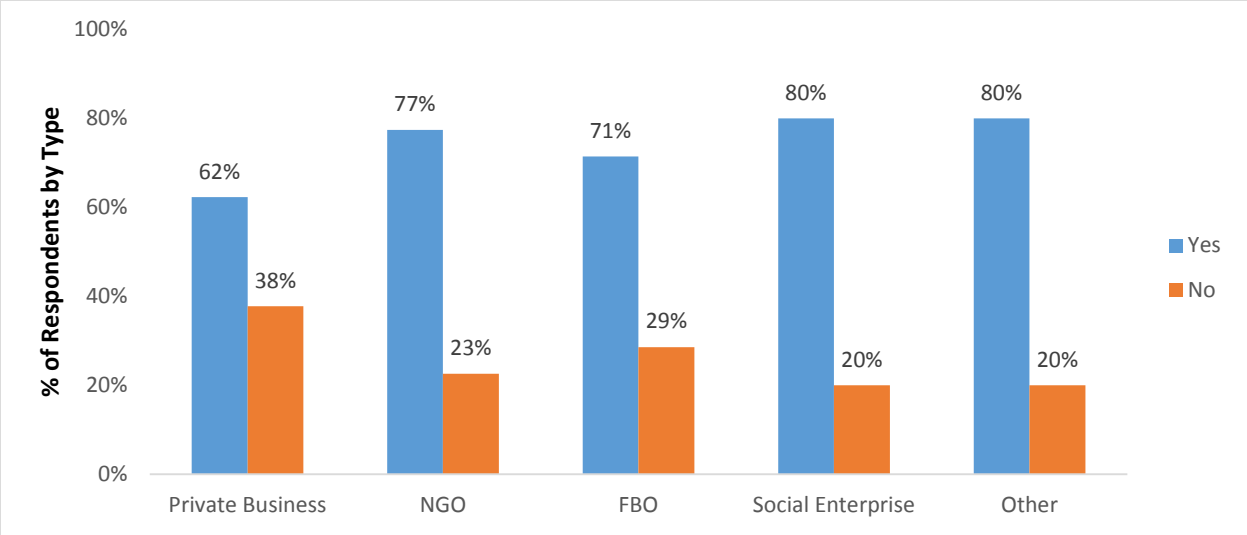

Figure 27. Public Private Partnerships by Organization Type.

In our survey, we also rank extension programs' relative frequency of funding sources (Figure 28). The top three funding sources for extension programs are private companies (61%), followed by NGOs (45%) and public entities (39%). It is relatively hard for programs to get funding from farmer fees (19%), membership fees (14%) and individual donations (10%).

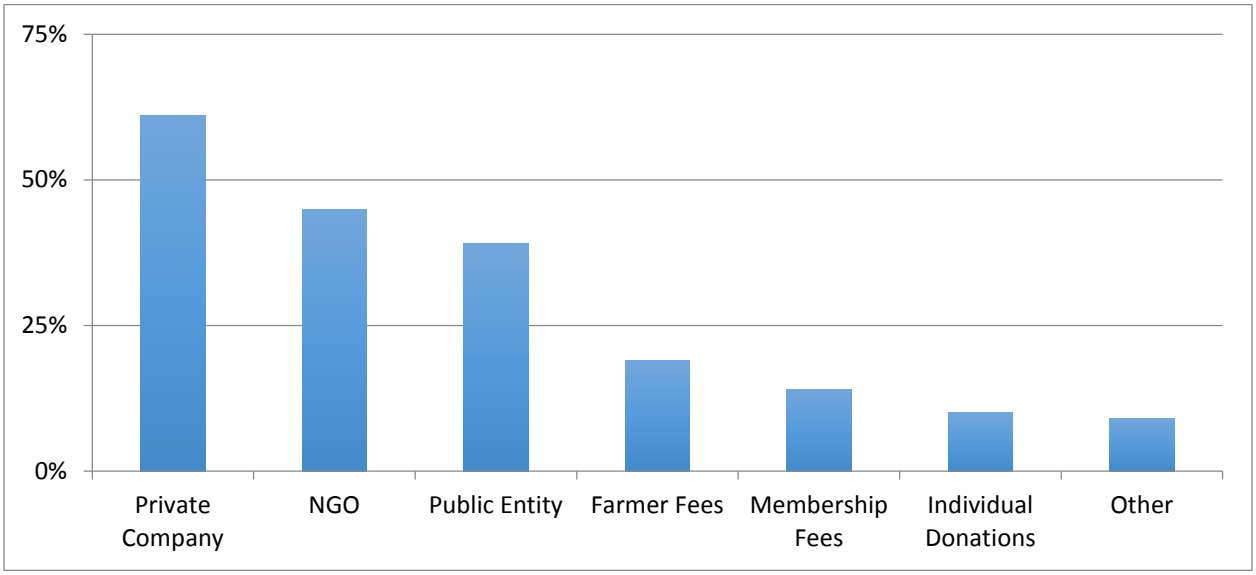

Figure 28. Relative Frequency of Funding Sources.

In table 2, we list how the extension programs implementation and funding are undertaken by organization/s with different partnership arrangements. Programs of the partnership arrangement "private company" (20 programs and 34%) are most implemented, followed by "NGO" (11 programs and 19%), "private company & NGO" (8 programs and 14%). Programs with less number of implementations

are from "public entity & NGO" (4 programs), "private company, public entity & NGO" (4 programs), "FBO" (3 programs), "public entity" (2 programs), "public entity & FBO" (2 programs), "private company, public entity, NGO & FBO" (2 programs), "private company & FBO" (1 program), and "Private company, public entity, NGO & FBO" (1 program). No program is implemented of the partnership arrangement of "private company & public entity" and "FBO & NGO". In terms of funding, programs of the partnership arrangement "private company" and "private company, public entity & NGO" are most funded, each have 12 programs funded and account for 17% of total programs. There are also some programs funded of the partnership arrangement "NGO" (9 programs, 13%), "public entity & NGO" (8 programs, 11%), "private company & FBO" (7 programs), and "private company & NGO" (6 programs). There are also small numbers of programs funded of the partnership arrangement "public entity", "FBO", "private company & public entity", "public entity & FBO", "FBO & NGO" and "private company, public entity & FBO". No program is funded of the partnership arrangement "private company, public entity, NGO & FBO".

	Implementation (N=58)		Funding (N=72)	
Partnership Arrangement	#	%	#	%
Private company	20	34%	12	17%
Public entity	2	3%	5	7%
NGO	11	19%	9	13%
FBO	3	5%	3	4%
Private company & public entity	0	0%	3	4%
Private company & NGO	8	14%	6	8%
Private company & FBO	1	2%	7	10%
Public entity & NGO	4	7%	8	11%
Public entity & FBO	2	3%	2	3%
FBO & NGO	0	0%	3	4%
Private company, public entity & NGO	4	7%	12	17%
Private company, public entity & FBO	2	3%	2	3%
Private company, public entity, NGO & FBO	1	2%	0	0%

Table 2. Partnership Arrangements for Implementation & Funding.

5.4 Extension Activities

Respondents were asked: "*In your own words, please describe the overall goal or mission of your agricultural extension services."* The six common elements to describe the overall goal, objectives or mission of the respondents' agricultural extension services correspond to the following areas:

- Social objectives such as poverty reduction, health and safety, improved quality of life, food security and nutrition, and prevention of child labor
- Productivity goals that are traditional to the agriculture extension training model and focused on improved agricultural practices that are promoted through technical assistance, field based learning such as demonstration plots and improvement through monitoring and evaluation of extension programs
- Collaboration goals are developed through some combination of a public-private partnership (PPP) that is participative, supported by private sector/corporate goals but responsive to farmer based organizations (FBOs) that improves the training and extension capacities of farmer's

organizations and other governmental and non-governmental organizations and the creation of shared values among small farmers.
- Environmental objectives for sustainable natural resource management
- Market access for commercialization, farm business development and value-added processing
- Innovation that focuses on technology transfer, applied research and ICTs

Additional goals and missions were mentioned that were more specialized or a combination of these six predominant themes. Examples include the following that are listed without ranking of their prominence:

- Financial arm for farming production support
- Farm production, planting inputs, technical assistance and sound postharvest practices
- Organizational/cooperative development
- Participative approach
- Using diversified channels and content tailored to each actor and demand
- Train farmers on best fertilizer management practices and best crop agronomic practices
- Linking private sector product/service providers to community-based service providers/end users
- Provide financial management training to support effective business management and growth
- Provide a "bundle approach" that is a complete set of services within walking distance of the farmers
- Bring financial resources, expertise and innovative spirit to address food security and water scarcity

Regarding the quantitative aspect of the survey, organizations we surveyed target diverse aspects of agriculture and food security as part of their extension activities. These range from traditional extension focus on the transfer technical knowledge to more recent impetus on livelihood and development oriented efforts (Figure 29). A vast majority of respondents continue to provide technical assistance (92%), value chain development (78%) and business development (77%), while financial services and those relating to natural resource management are not as prevalent. This is also evident in the reported ranking of extension approaches in order of importance by respondents in Figure 30. The average ranking of the three traditional approaches on a 0-3 scale (3 indicating highest importance) is much greater than the importance attributed to other approaches.

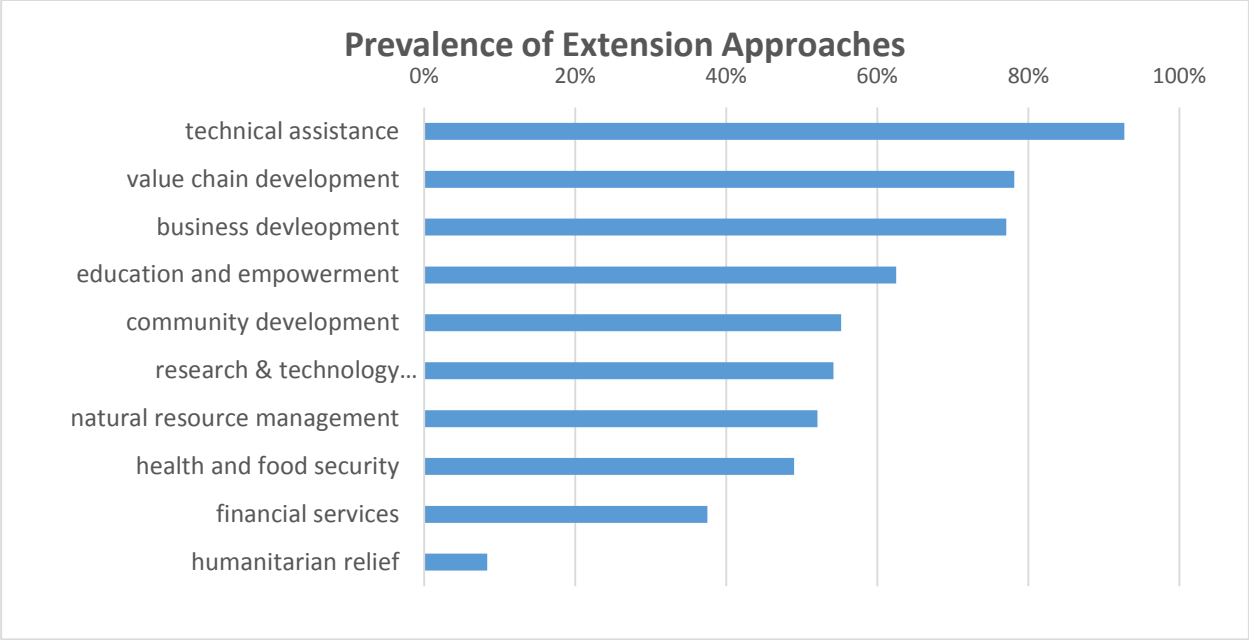

Figure 29. Prevalence of Extension Approaches

Encouragingly, around 62.5% of respondents also engaged in community development and 55% in education and empowerment initiatives suggesting that there has been a recognition that extension efforts are sustained only when supplemented with holistic social change. These approaches as well as health and food security were reported as being relatively more important on average, than even financial services, natural resource management and research and technology development (Figure 30).

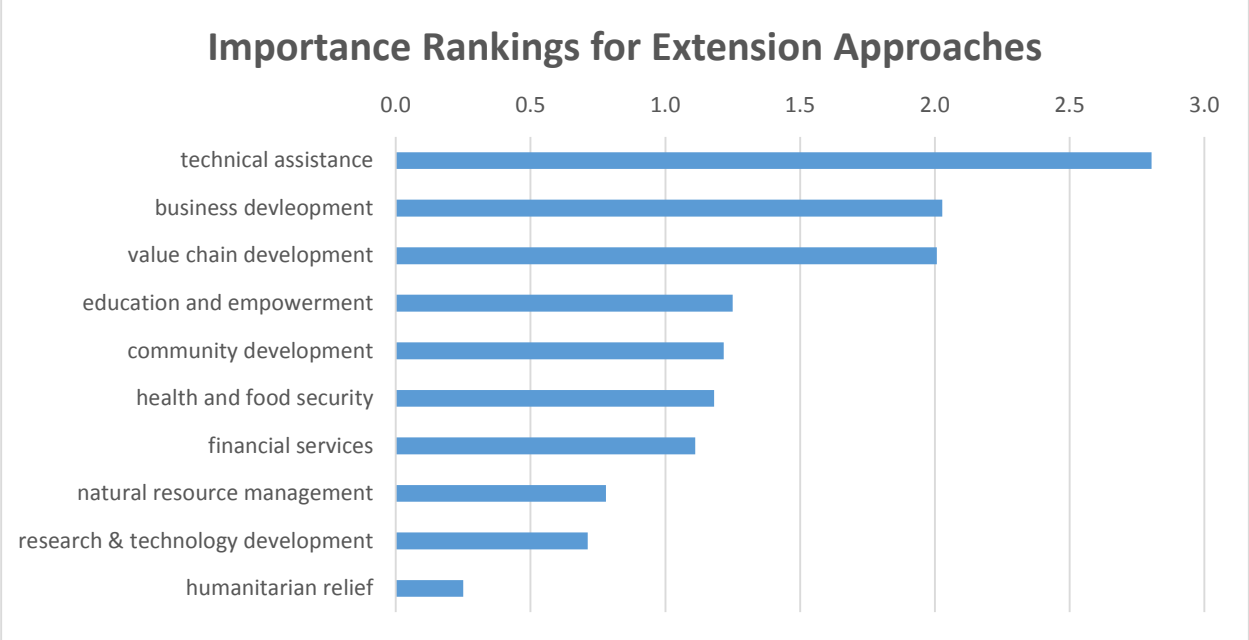

Figure 30. *Importance Rankings for Extension Approaches.* This figure shows the mean importance ranking for each extension approach, based on a ranking system from zero to three (0 = not important; 1 = low importance; 2 = moderate importance; 3 = high importance).

Organizations tended to use a combination of tactics or strategies in a multi-pronged effort to achieve targeted outcomes. Figure 31 summarizes the total number of tactics adopted organizations and Figure 32 details the prevalence of each tactic. Half of all organizations in the sample utilize more than 9 different tactics. 8 of them used all 13 tactics listed in Figure 2 while only 5 organizations concentrate their entire effort on using a single tactic.

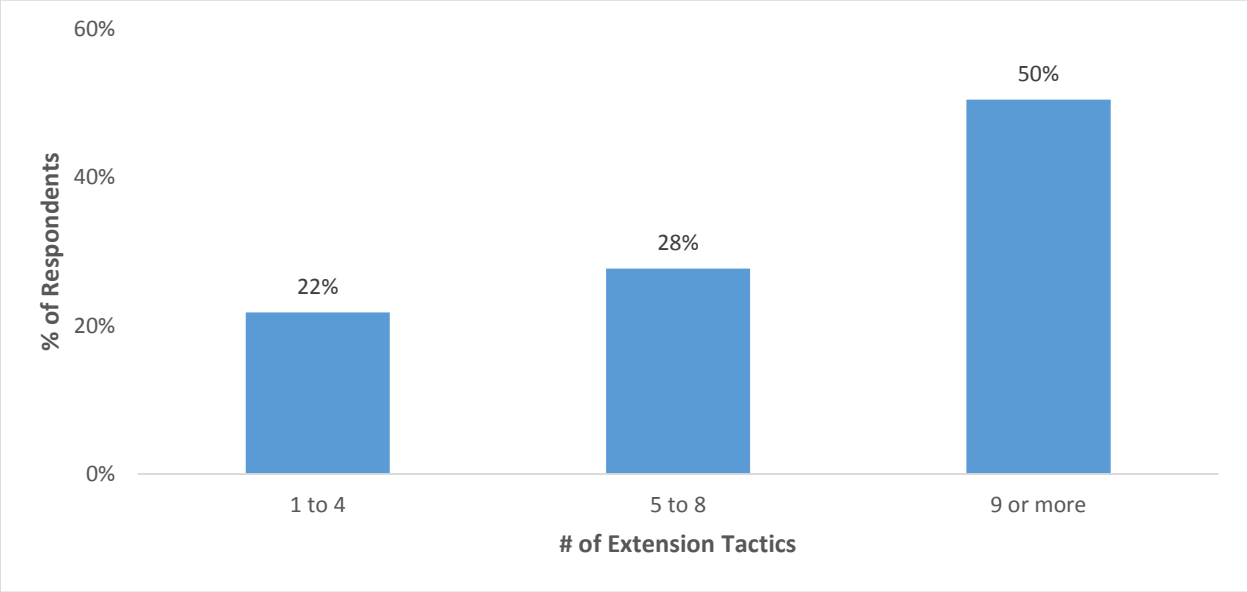

Figure 31. *Half of respondents use 9 or more different extension tactics.* This figure shows the percentage of respondents associated with each range of extension tactics.

Among the tactics adopted two are conventional ones - such as demo plots and the lead farmer approach adopted by 75% and 74% of respondents respectively, and relatively newer ones- such as the use of information and communication technology and networking (Figure 32). Tactics to facilitate communication and cooperation between various actors in a value chain are widely adopted with around 60% of organizations leveraging information and communication technology, farmer-to-farmer networking, farmer-to-buyer networking and market linkage strategies to the benefit of small-holder farmers. Other popular tactics that still continue to be largely prevalent among the sample are provision of inputs (70%) and engagement of producer groups (67%), while, farmer field schools appear to have fallen out of favor.

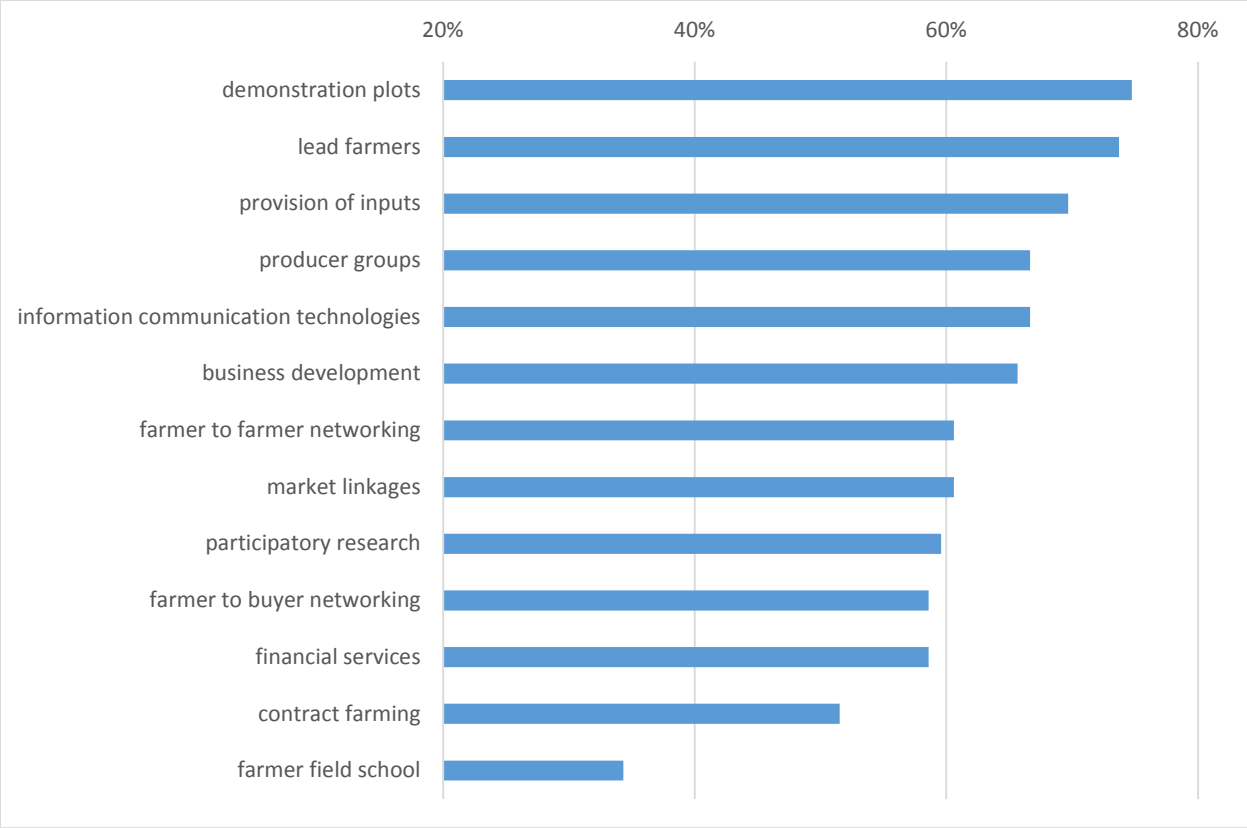

Figure 32. *Prevalence of Extension Tactics.* This figure shows the percentage of respondents who report using each of the extension tactics.

Accessible to over 3/4th of the world's population[1] by 2012, an increasingly important medium in extension tactics, especially for those centered on improving communication and coordination across the value chain, is mobile telephony. 73% of respondent used mobile phones for communication with their target audience. However, internet, email and social media were used by fewer 30% of respondents and printed handouts still seemed to be the most widely used method of communication (Figure 33). Aside from the media listed in Figure 33, few organizations also made use of training videos and tablets for information and technology transfer.

[1] World Bank. Information, Communication Technologies, and infoDev (Program). *Information and Communications for Development 2012: Maximizing Mobile*. World Bank Publications, 2012.

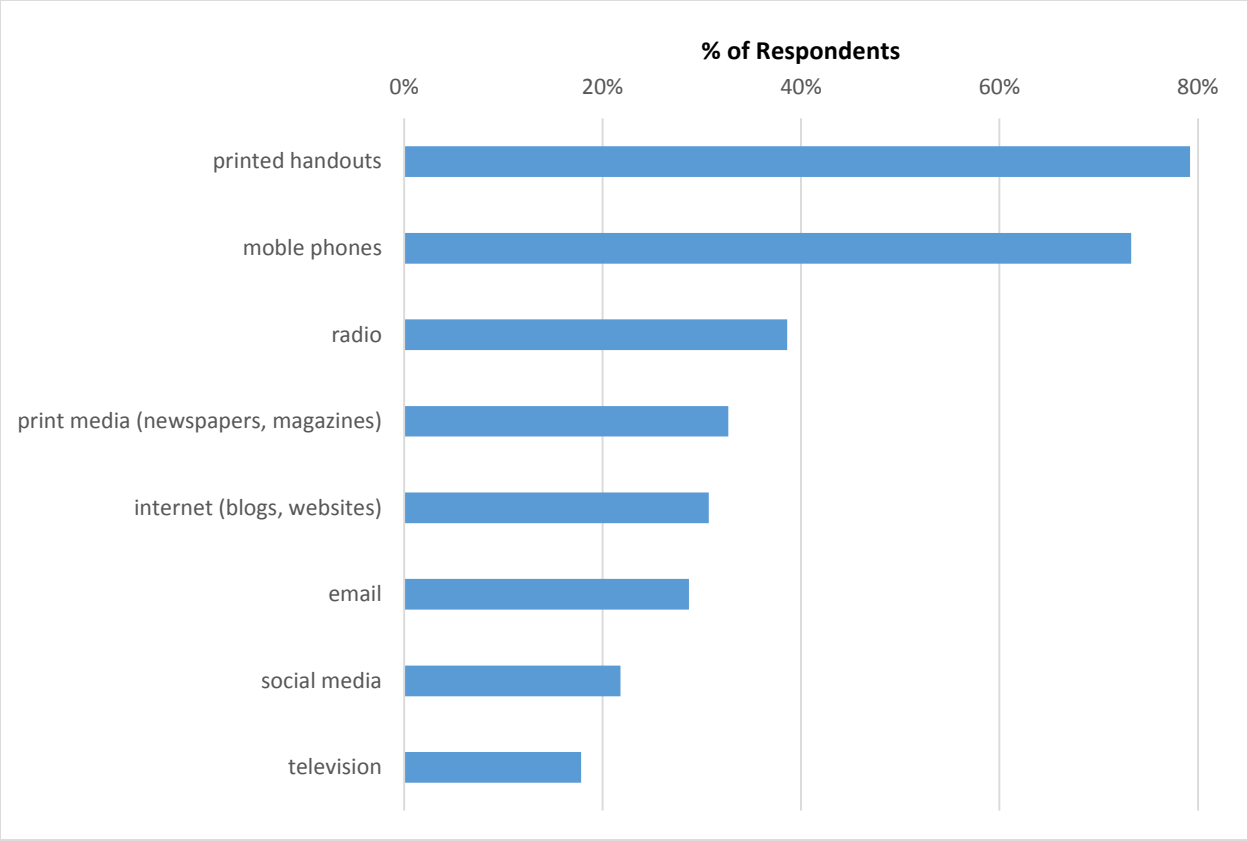

Figure 33. *Prevalence of Communication Technologies.* This figure shows the percentage of respondents who report using each communication technology.

Figure 34 and 35 compared the adoption of communication technologies across geographic regions and across extension organization types. The proportion of organizations using mobile telephones is highest in Africa (80%) compared to those in Latin America and Caribbean and Asia and Pacific Islands, where paper handouts were relatively more widespread. In comparison to the other two regions, organizations in Asia and Pacific had wider adoption of internet and social media.

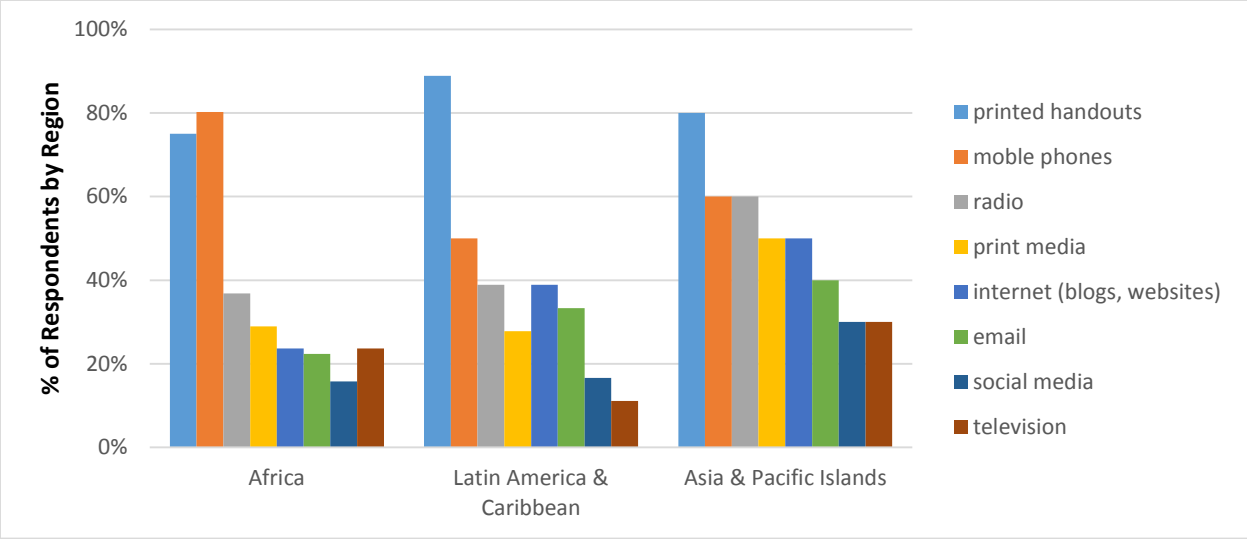

Figure 34. *Communication Technologies by Region.* This figure shows the percentage of respondents in each region who report using each communication technology.

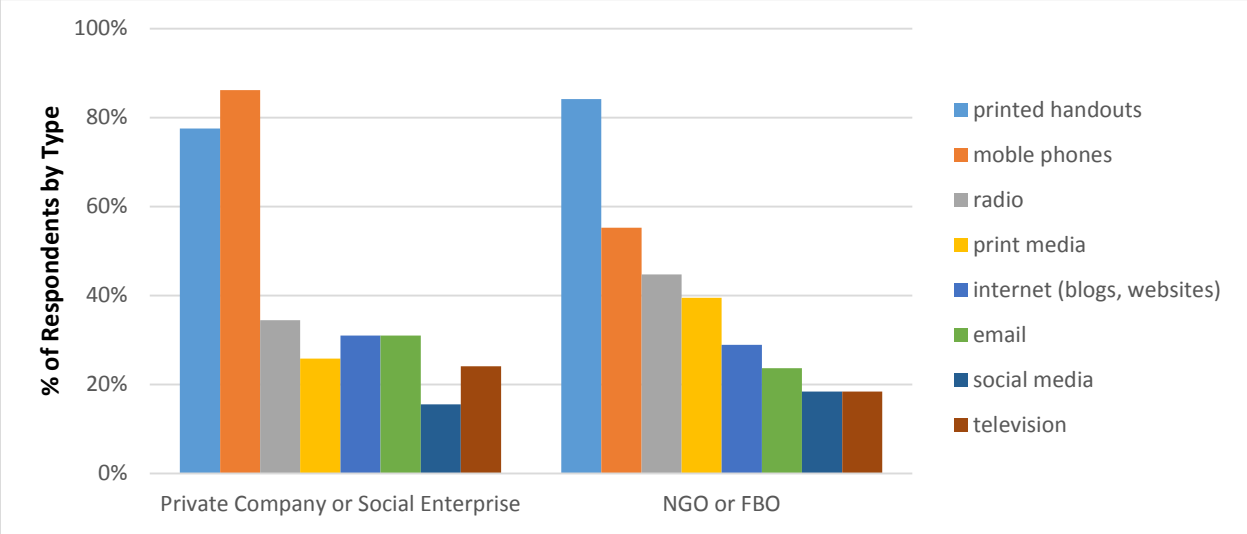

Figure 35. *Communication Technologies by Organization Type.* This figure shows the percentage of respondents in each organizational type that report using each communication strategy. We group social enterprises with private businesses and FBOs with NGOs because of the small number of social enterprises and FBOs in our sample.

The instance of mobile technology use was higher and more popular than other media among private companies and social enterprise respondents compared to NGOs and FBOs (Figure 35). 86% of private companies and social enterprises used mobile phone compared to 76% using printed handouts, while among NGOs and FBOs, 84% used printed handouts compared to only 55% using mobiles. The prevalence of print media and radio was also relatively higher among NGOs and FBOs.

One of the major disadvantages of public and state funded extension systems is the scarcity of qualified and skilled staff to effectively disseminate technical information, develop innovative approaches and use communication media for interactive engagement of the audience. While agronomic knowledge tends to be considered as the most important skill organizations require in their educators, communication and adult education and knowledge of natural resource management were also considered by respondents to be relatively important. Figure 36 captures the average ranking of skill importance as reported by respondents on a scale 0-3 with 3 denoting high importance.

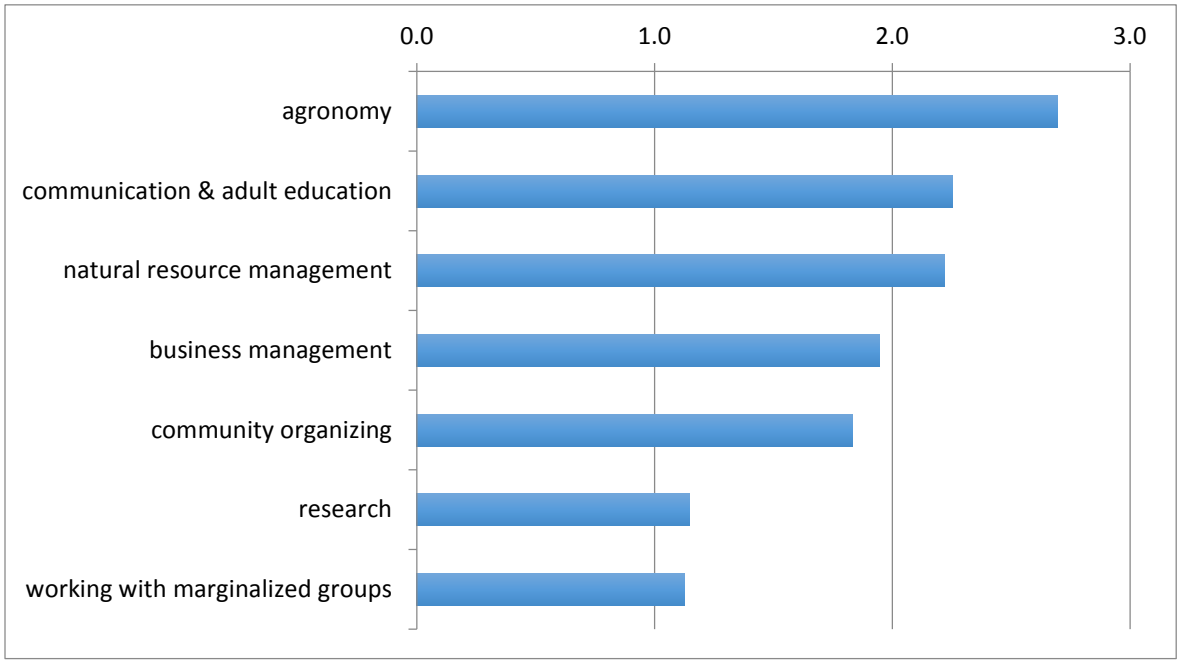

Figure 36. *Importance Ranking of Educator Skills.* This figure shows the average importance ranking for a series of possible extension educator skills, based on a ranking system from zero to three (0 = not important; 1 = low importance; 2 = medium importance; 3 = high importance).

Most organizations also require a minimum level of qualification for hiring extension staff. We developed an education index for the privately-led extension organizations in our study on a scale of 1-5 where 1 corresponds to primary school; 2 to high school; 3 to technical/vocational training; 4 to college and 5 to graduate school. The education level of extension staff in 85% of organizations in sample was higher than 3 implying that all organizations employed staff with vocational training or higher. Educators in Latin America and the Caribbean and Asia and Pacific tended to be on average slightly more formally qualified than educators in Africa (Figure 37).

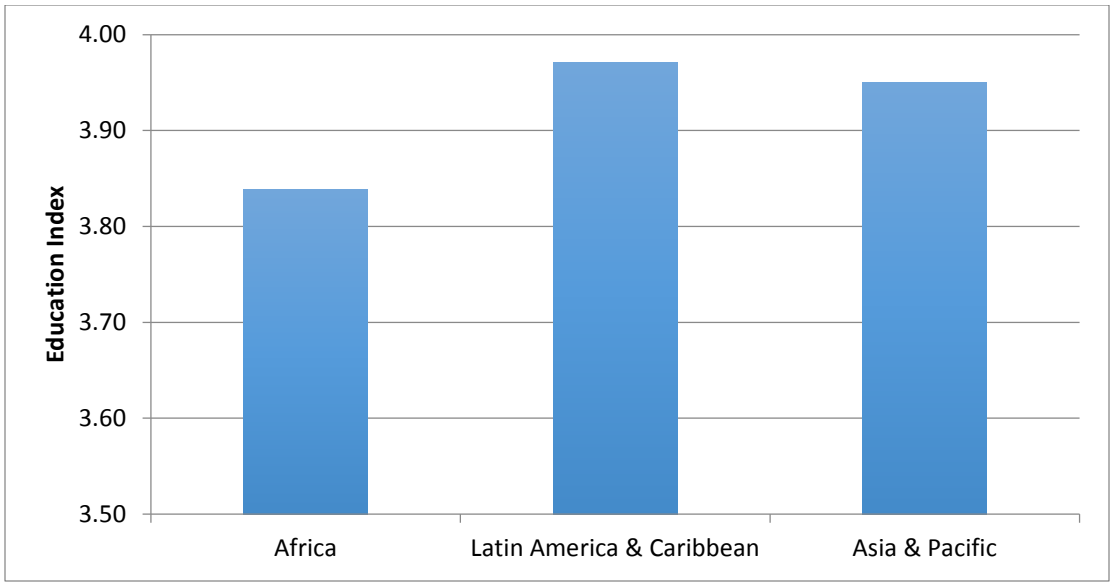

Figure 37. Pre-Service Education Level by Region.

Educators employed by extension organization undergo in-house training to supplement their existing skills and are often periodically retrained in refreshers and introduced to newer technology and information. The intensity of training provided ensures more effective performance and monitoring but at a cost to the organization. An index from 1-4 captures the frequency of trainings and subsequent refreshers conducted in organizations from 1 denoting weekly frequency; 2 denoting biweekly; 3 denoting monthly; 4 denoting annual trainings. Organizations in Africa conducted trainings less frequently than other regions perhaps as a consequence of higher costs of coordination (Figure 38).

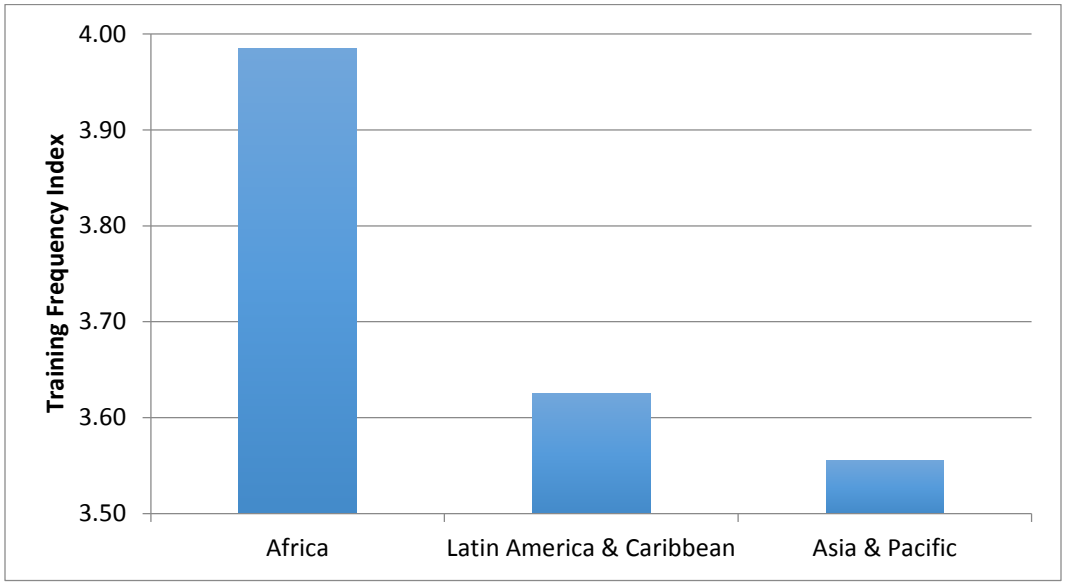

Figure 38. *In-Service Training Frequency by Region.* This figure shows the average in-service training frequency for each region, given by a training frequency index (Shorter bars indicate a higher frequency of training.

5.5 Performance Outcomes

Our survey required organizations to evaluate their achievements of stated objectives. These objectives included direct "production" related ones such as increasing productivity, increasing quality, promoting technology adoption, improving environmental management, increasing market access, improving business management and ensuring the reliable supply of agricultural products, as well as indirect "social" objectives such as improving farmer livelihoods, reducing poverty, improving conditions for marginalized groups and promoting climate change adaptation. 94% of organizations aimed to increase productivity of selected crops under their purview, 88% aimed to promote technology adoption and 85% to increase product quality (Figure 39).

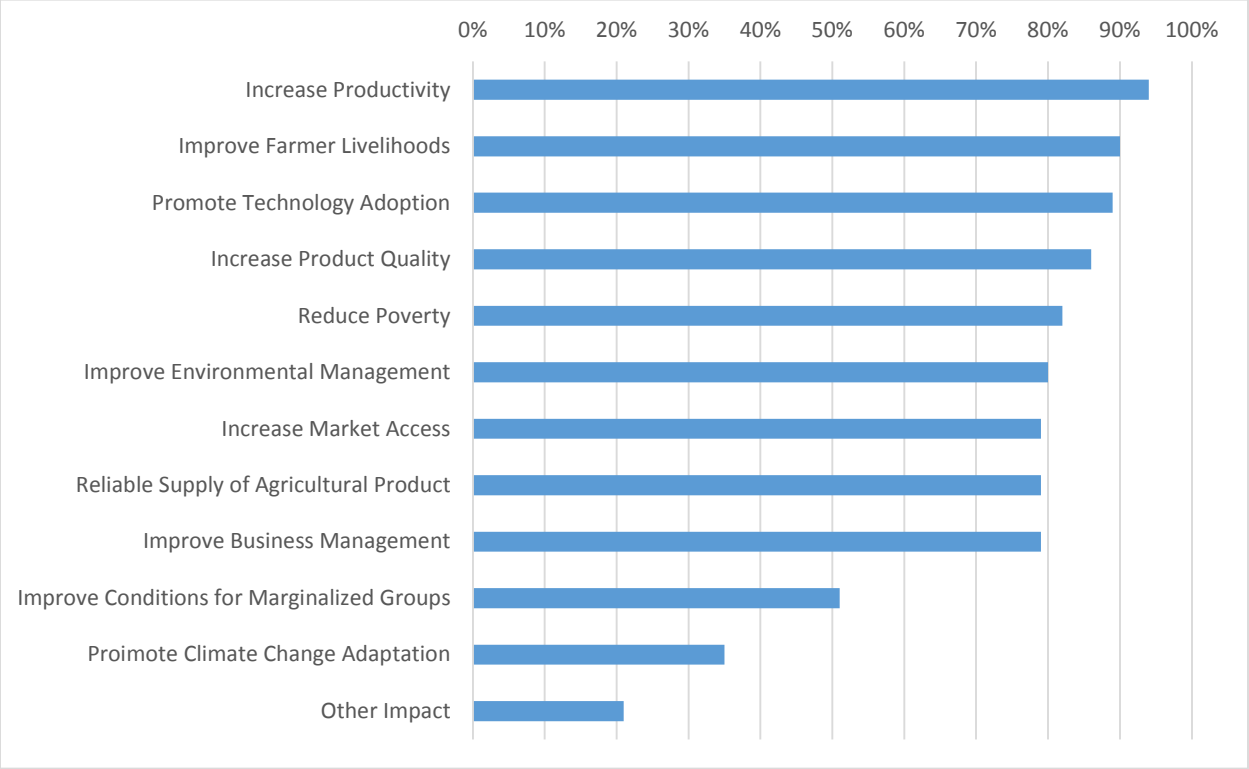

Figure 39. *Prevalence of Extension Objectives.* This figure shows the percentage of respondents whose extension programs are intended to meet each of the listed objectives.

A majority of organizations also reported indirect development outcomes alongside more direct agriculture related outcomes. As reported in Figure 40, more than 70% of organizations have between 9 and 11 stated objectives. More than 82% of them aimed at reducing poverty and improving farmer livelihoods (Figure 39).

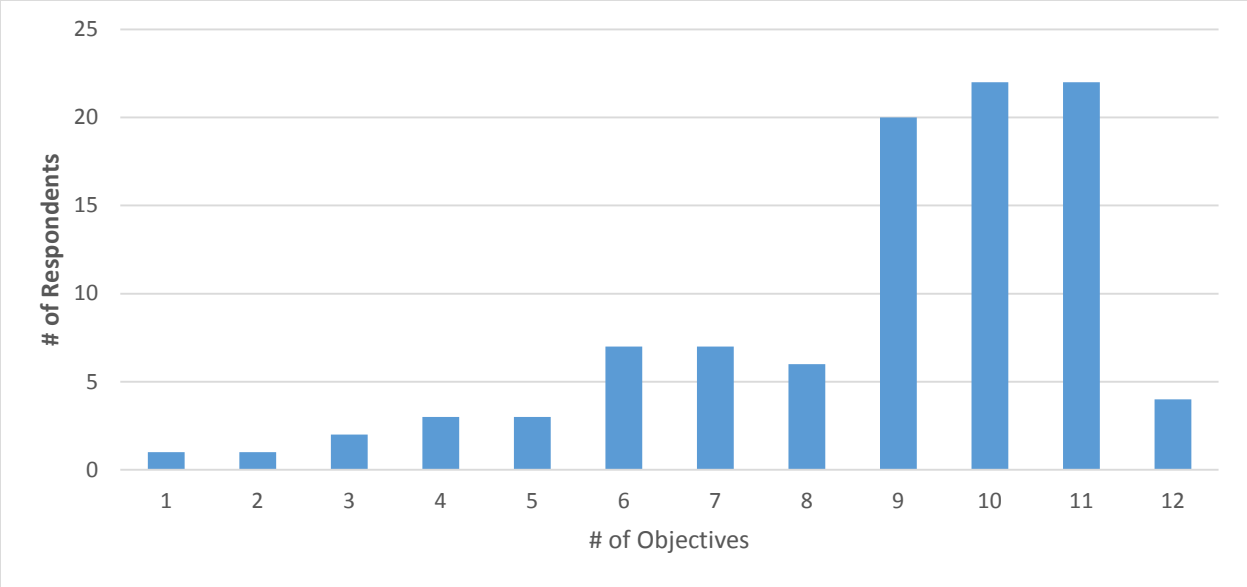

Figure 40. *Number of Extension Objectives per Organization.* This figure shows the number of respondents who report each number of extension objectives. Most organizations report between 9 and 11 extension objectives.

Surveyed respondents were asked to evaluate themselves qualitatively on a scale of 1-5 with 5 denoting excellent progress towards objectives. The self-evaluated performance scores on each stated objective are analyzed in relation to various determinants below.

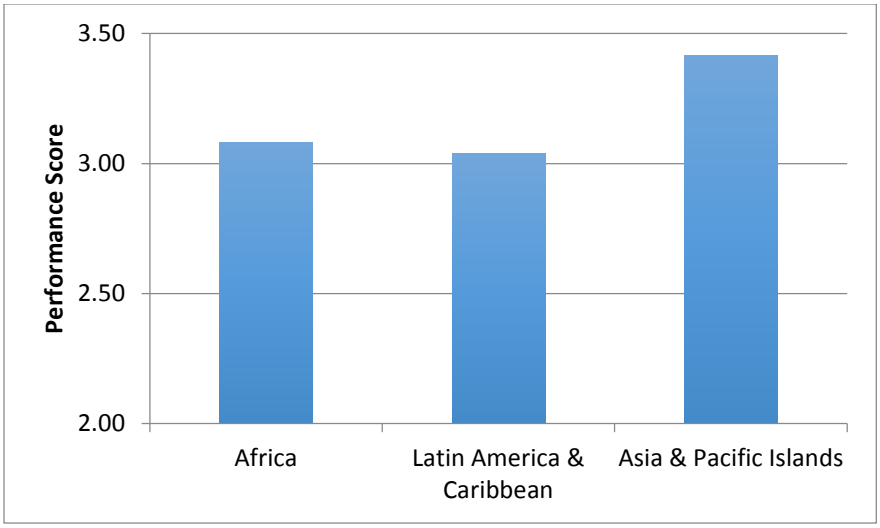

Figure 41. *Performance Score by Region.* This figure shows the mean self-reported performance score across all objectives for each region based on a ranking system from one to five (1 = needs improvement; 2 = limited progress; 3 = good progress; 4 = very good progress; 5 = excellent progress).

Figure 41 reports the mean performance level on all objectives by organizations in different regions. On aggregate, Asia and Pacific Islands respondents experienced a marginally higher success rate than the other two regions with a mean performance score close to 3.5. Mean success rates varied across

objectives, with respondents finding relatively higher success rates at increasing productivity and other direct supply related outcomes than social outcomes such as reduction of poverty, environmental management, improved conditions of marginalized groups (Figure 42). These relatively 'harder' to attain outcomes are also those that are indirect objectives and are characterized by the influence of a host of exogenous factors and confounding variables.

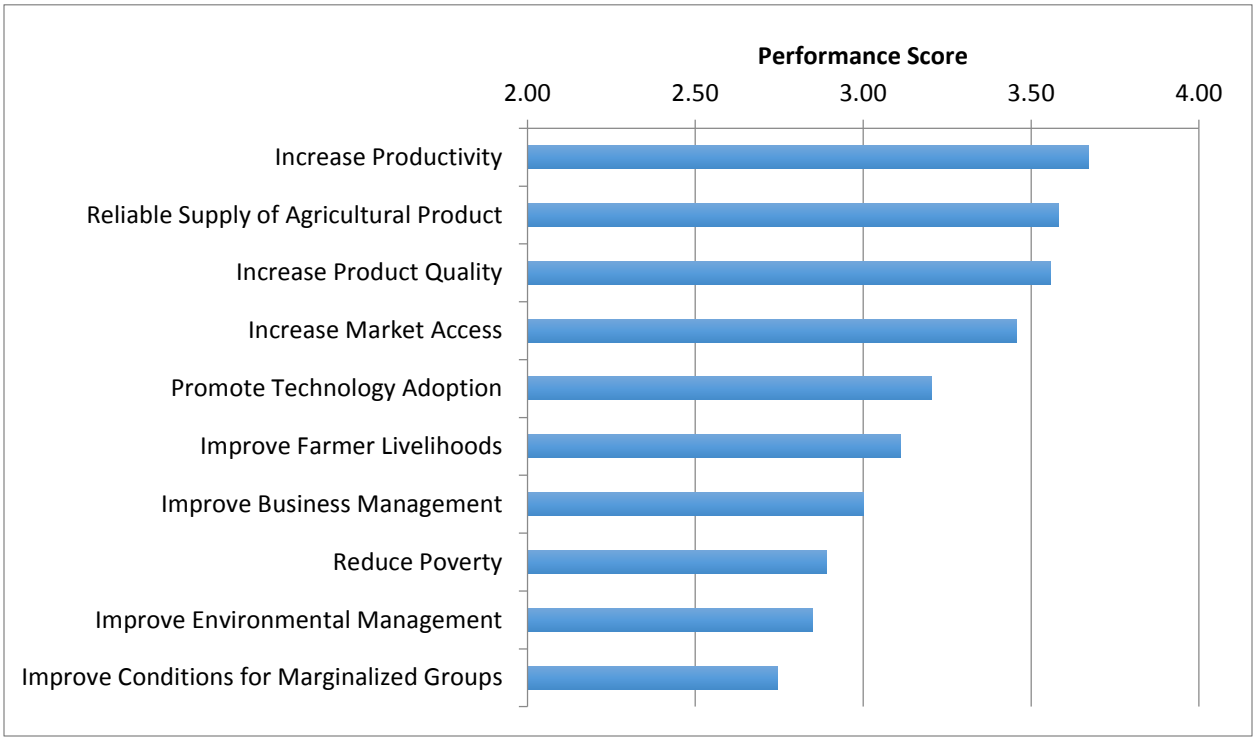

Figure 42. *Performance Score by Objective.* This figure shows the mean self-reported performance score for each program objective based on the ranking system described above.

Figure 43 presents a break up of mean performance scores both by objective and by region. Asia and Pacific Island respondents report a higher success than Africa and Latin America and Caribbean respondents in increasing productivity and ensuring reliable supply of agricultural products, as well as the relatively harder to attain goals of improving environmental management and improving the condition of marginalized groups. Respondents in Africa also reported better performance in improving product quality compared to Latin American and Caribbean organizations.

Splitting mean performance scores on the most prevalent agricultural supply or "production" based objectives by the target audience in Figure 44, we find that organizations have been relatively more successful in achieving productivity and quality outcomes with smallholder farmers holding less than 2 hectares. However livelihood outcomes and reliable supply are relatively easier to reach among larger farmers cultivating 2-10 hectares than those with very small landholding size.

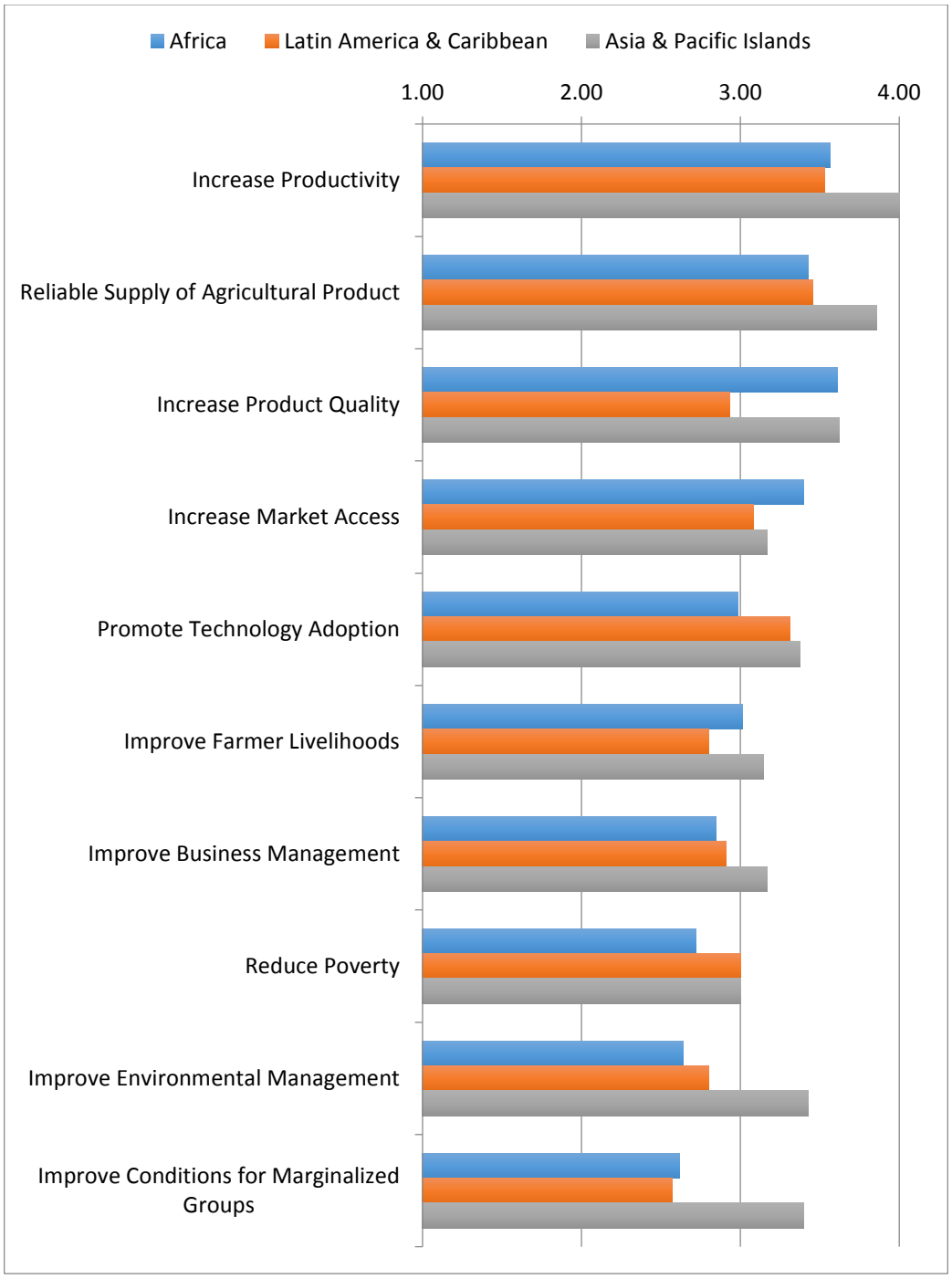

Figure 43. *Performance Score by Region and Objective.* This figure shows the mean self-reported performance score for each objective, broken down by region, using the ranking system described above.

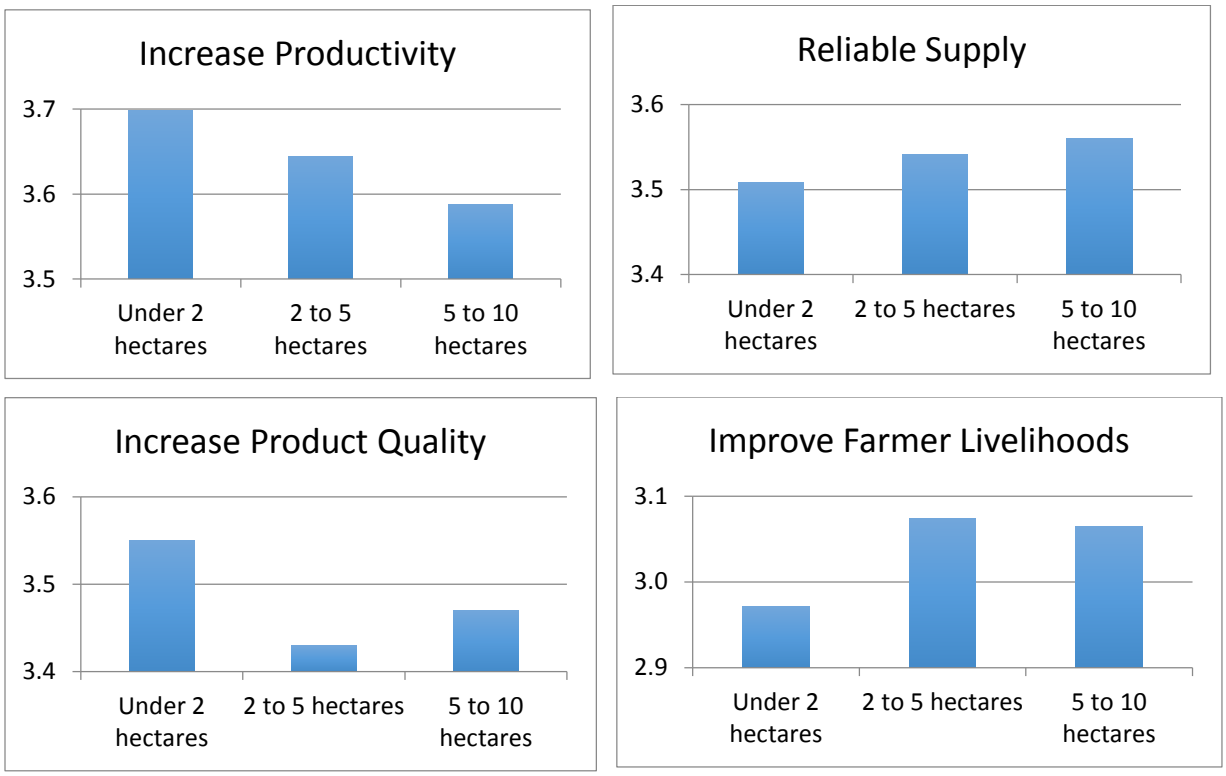

Figure 44. *Performance Score by Program Audience for Four Objectives.* This figure shows the relationship between target audience (farm size) and mean self-reported performance score for four program objectives (increase productivity, reliable supply of agricultural product, increase product quality and improve farmer livelihoods) using the ranking system described above.

Similarly, social objectives such as improving livelihoods, reducing poverty and improving the condition of marginalized groups is better achieved in extension targeting growers of horticulture and crops than other crops and livestock produce (Figure 45).

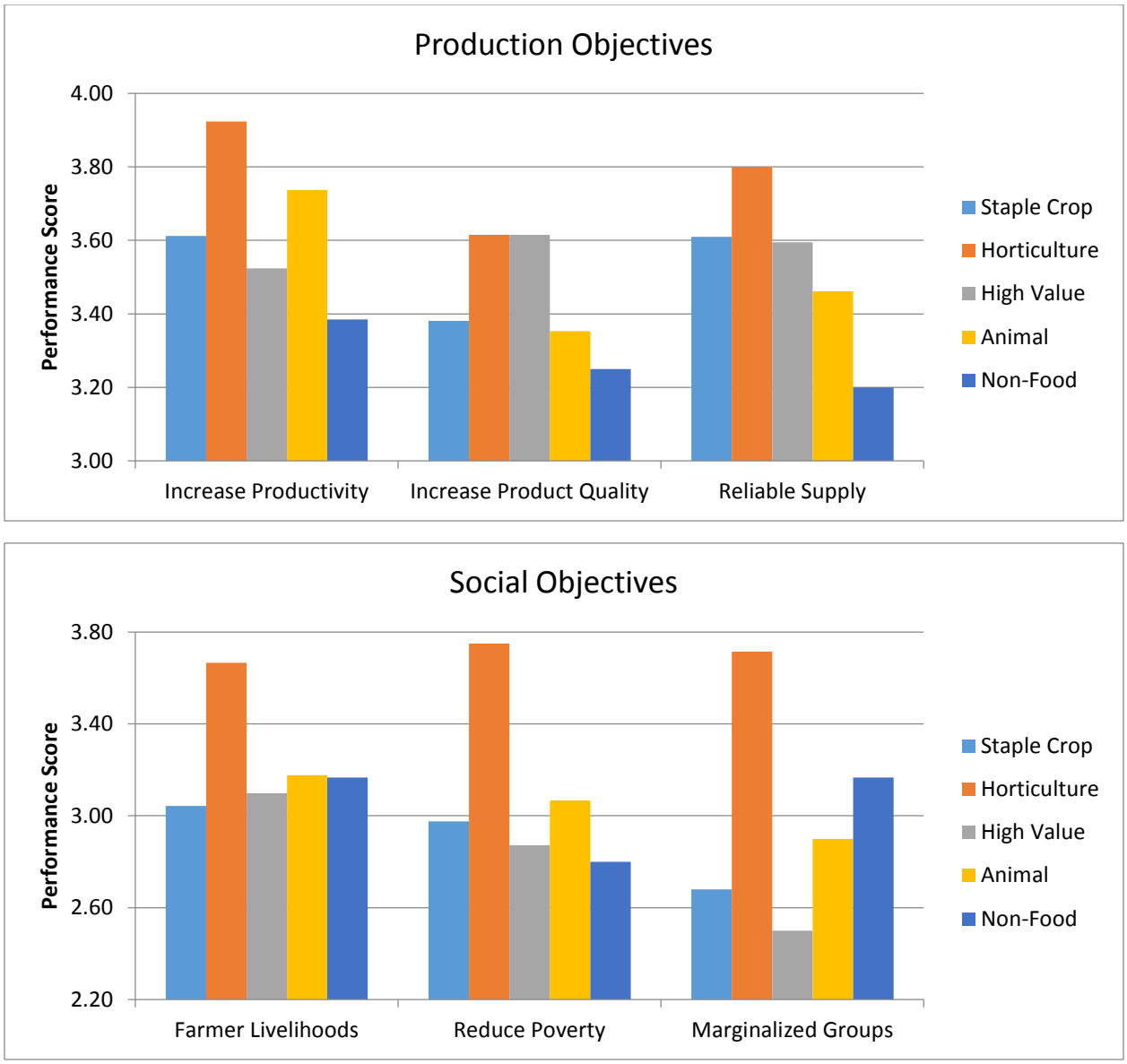

Figure 45. Performance Scores for Production and Social Objectives by Product Type.

We also compare self-reported performance scores across the broad organization types in Figure 46. We find that although private businesses and social enterprises report as performing significantly better that NGOs and FBOs in production and supply related outcomes, their performance is comparable in social outcomes, technology adoption and business outcomes.

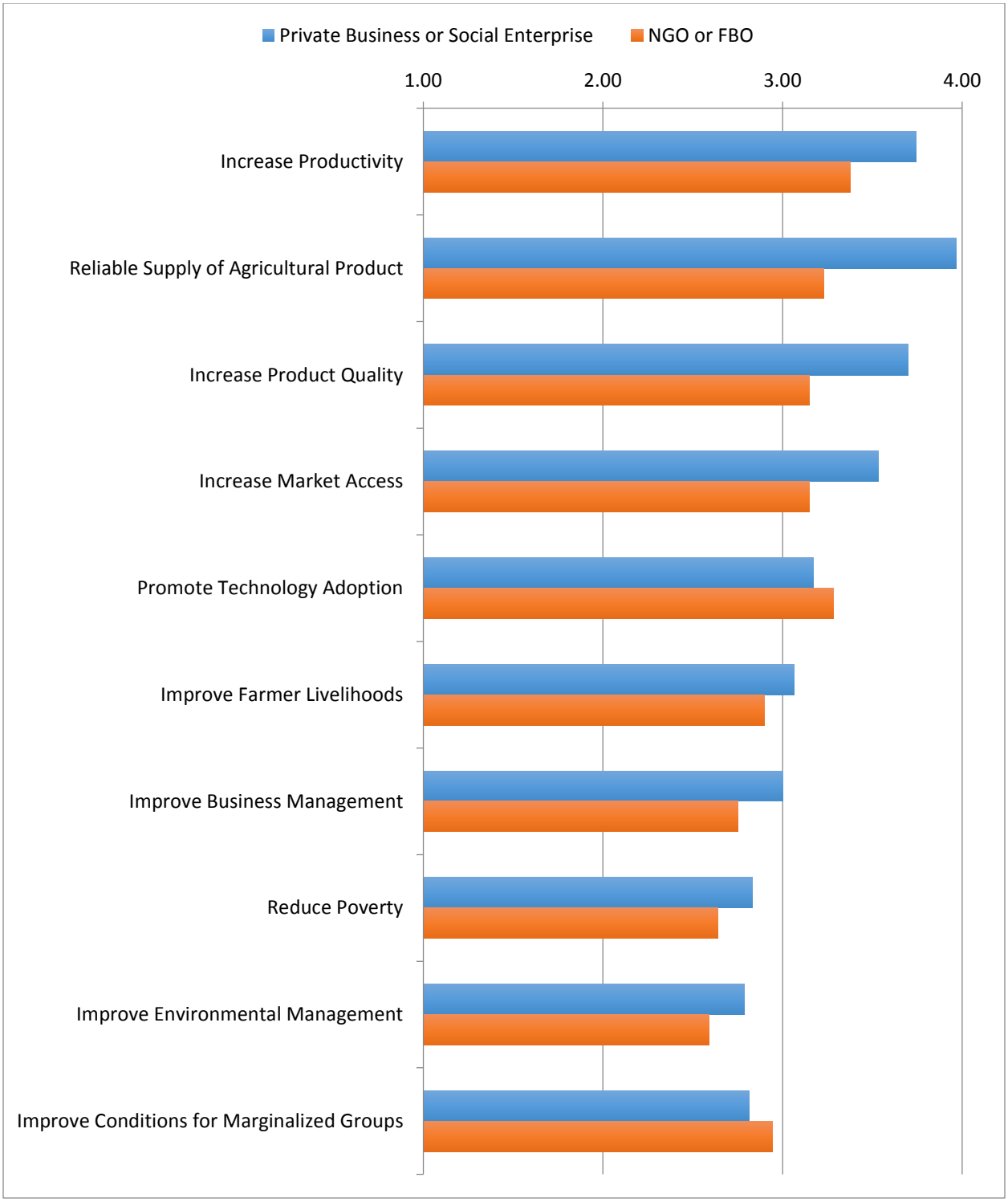

Figure 46. *Performance Scores by Organization Type and Objective.* This figure shows the mean self-reported performance score for each objective, broken down by organization type, using the ranking system described above.

When split by value chain position of the extension provider too, we notice a difference between relative reported mean performance score in production related outcomes versus social outcomes. Organizations that are upstream or downstream on the value chain as well as those who are only producers and those who only lend support to the value chain, all perform comparably in production related outcomes such as increasing productivity, quality, market access and ensuring reliable supply. Differences in mean performance levels however appear between these types of organizations in social outcomes. Respondents upstream on the value chain (i.e. providers of raw inputs into the production process) and those who lend support to the value chain tend to report better achievement of social outcomes compared to downstream and producer organizations (Figure 47).

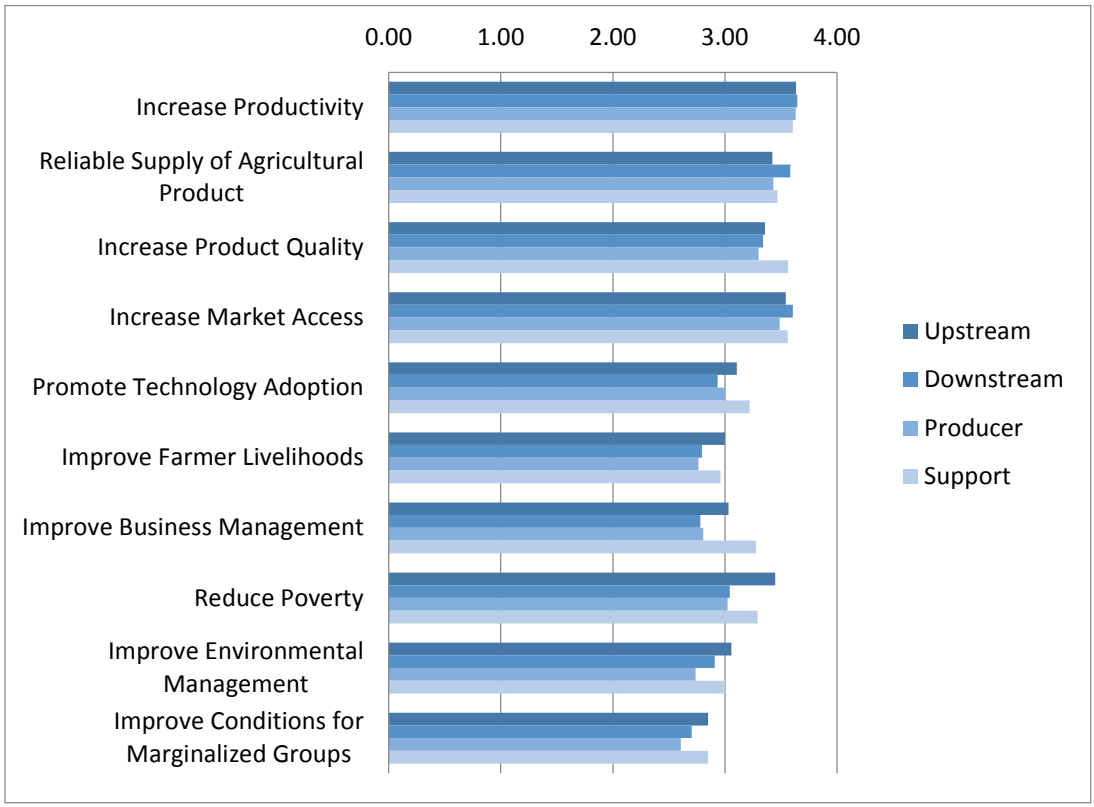

Figure 47. Performance Scores by Value Chain Position

Mean performance scores are comparable across all stated objectives between respondents who are a part of a PPP (Public-Private Partnership) and those who are not, with non-PPP respondents consistently reporting marginally better achievement of outcomes.

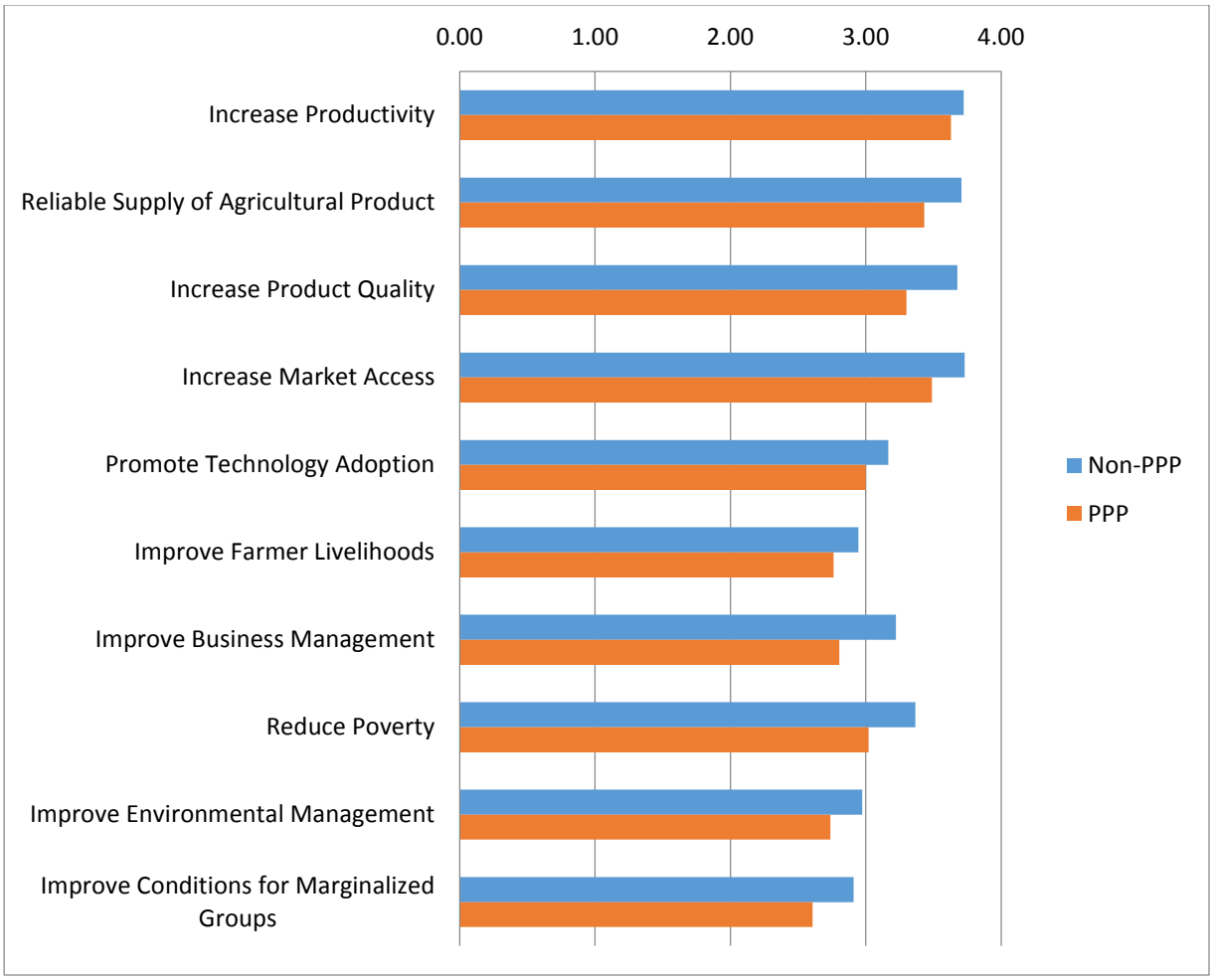

Figure 48. Performance Scores by PPP (Public-Private Partnership) participation

Although self-reported evaluations may be affected by how clearly defined its goals are and how strictly it is upheld as well as the whether or not they conduct external evaluations as well, they are a good indicator of organization efficiency. We are able to see consistent differences in performance pertaining to achievement of direct "production" related outcomes and indirect "social" outcomes across various determinants. Production related outcomes tend to be achieved with relative ease, especially by private businesses and social enterprises and especially among smallholders farming less than 2 hectares of land. In contrast, indirect outcomes that are also affected by complex social and natural factors are harder to achieve and NGOs and FBOs, organizations that are upstream or lend support to the value chain and work with horticulture crops. This suggests that the capabilities and efforts required to attain social objectives are different from those required to achieve adequate supply and organizations pursuing the former may need to pay closer attention to these.

5.5 Keys and Barriers to Success

Based on your experience, what are two or three key elements of successful extension programs? Four themes were most prominently mentioned followed by a diverse variety of additional characteristics that were mentioned as key elements for successful extension programs. The most prominent key elements for successful extension programs were:

- Participatory & Contextual Approach that
    - Builds trust and long-term relationships with farmers
    - Responsive to local conditions and farmer concerns
    - Develops long-term institutional partnerships
    - Emphasizes local staffing
    - Encourages two-way knowledge sharing
- Traditional extension approach that includes farm visits, field days, demonstration plots, workshops, newsletters and distribution of printed materials
- Professional development and training of extension personnel
- Monitoring and evaluation of extension programs using consistent metrics and methods for evaluating success that are shared across organizations, sectors and industries

Responses to the key elements of successful programs were, in some cases, a restatement of the goals and mission of extension programs asked previously in the survey. Other specialized elements were also mentioned. Examples include the following that are listed without ranking of their prominence:

- Technical assistance is embedded in the structure of the supply chain
- Extension activities use existing nodes of connection and communication channels to reach farmers
- Applied research, introduction of innovations and technology transfer
- Use of media and social media
- Holistic approach that includes marketing, production inputs and organizational development
- Agro-ecology, and awareness of climate conditions
- Partnerships and the avoidance of duplication of efforts
- Value-added market chains
- Extension arrangements go beyond a single cash crop to support holistic farm management and opportunities for diversified production
- Integrated extension activities address challenges along the entire value chain
- Private sector led and involvement of farm businesses
- Farm production based focusing on irrigation, disease free production, quality inputs and postharvest practices
- Financing assistance to smallholders for production costs

Based on your experience, what are two or three shortcomings of current extension programs? Three themes were most prominently mentioned followed by a diverse variety of additional characteristics that were mentioned as barriers for successful extension programs. The three shortcomings most frequently mentioned were the following:

- Lack of financial resources for extension programs
- Inadequate extension coverage-not enough extension field staff to reach the large number of farmers in their areas
- Low literacy and education levels among farmers

Other shortcomings were also mentioned. Examples include the following that are listed without ranking of their prominence:

- Corruption and bad business practices
- Lack of long range planning for institutional change
- Gender bias against women farmers
- Land tenure issues
- Top-down elitist approach that does not assist the poorest farmers
- Resistance to change
- Inadequate training and logistics to reach farmers
- Donor organization and/or government conflicts with private sector and local organizations
- Extension over-extended with too many different responsibilities
- Inadequate communication channels
- Poor infrastructure- electricity, roads, storage facilities etc.

Where do you see opportunities for growth and future development of extension activities? Responses to this question echo earlier comments related to key elements for successful extension programs such as: professional development of extension staff; innovation and technology transfer; participative approach with farmers; monitoring and evaluation of extension programs; building public/private partnerships; and, production related opportunities such as access to quality inputs.

Additional opportunities were similar to previous statements about the mission and goals of their extension organizations but provided some additional focus and details for these opportunities for growth and future development including the following:

- Existing nodes of connection can be leveraged to reach farmers
- Extension activities can provide information (market intelligence) about the needs of small farmers to private suppliers
- Private suppliers can use CRM processes to gather metrics for tracking extension success
- Modern communications technologies
- Better metrics and tracking
- Value-added export markets and/or strong national and local markets
- Greater emphasis on food safety and nutritional awareness
- Local processing and the development of alternative crops
- Focusing on smallholders as viable markets for input companies
- Diversifying extension services and zones of services
- Environmentally sound practices
- Farm business and entrepreneur development
- Social/community programs
- Youth programs

Which of your extension programs could be successfully replicated in other communities? What recommendations would you have for successfully scaling-up your extension programs? Scaling up and successful replication of extension programs across communities is perhaps the most challenging issue facing these organizations. It is not surprising then that there were fewer themes to address this question than any of the other open-ended statements or questions. The following is a summary of responses about which extension programs could be successfully replicated in other communities:

- Implement a local scan to determine the most successful features of local programs that could be replicated on a wider scale
- Disseminate widely good practices and lessons learned linked to the private sector
- Improved networking
- Competitive local and regional resource funding based on sound business plans
- Extend and expand crop production using a similar agricultural systems approach
- Increased and specialized planning-one size does not fit all as related to extension programs
- Expanded coverage of available markets

How can extension programs be sustained financially over time? What are your strategies for making extension affordable and cost-effective? Similarly to the scaling-up open-ended question, responses were limited as to how extension programs might be sustained financially over time. There was a mixture of micro and macro strategies mentioned in the following participant responses:

- Community-based approach with private sector participation with local farmers
- No free lunch, people come to learn at trainings
- Fee for service model
- Link production increases with improved postharvest management
- Limiting production to secure markets
- Public investment in Extension and Agriculture Universities
- Proactive production policies from government
- Private sector active partner with farmer organizations
- Develop funding sponsors with private/public/donor organizations

Please share any additional thoughts or information about your model for extension services that will help us to understand its strengths, challenges, opportunities and the potential for future impact. The following are statements or a paraphrasing of longer statements provided by the respondents as “Final Thoughts”:

- There is not any extension model that we can transfer from somewhere else. We should develop the model according to the social, institutional, technical, economics, infrastructure and etc. situation of the region. We should try to use all kinds of resources of the region as much as possible using participation and transparency at all levels.

- We in the past had support from various international donors, but these programs only run for about three years, and then it stops. And that is the main challenge that we have. You cannot switch development on and off like a switch. So we need longer-term partnerships and financial support from other role players.

- When a model of extension service constitutes participation, equity, humanistic development, also with technology and competitiveness, it should continue to accompany the development of the agricultural sector of a country. Probably we need more preparation, open up other fields, without any doubt. But there is a fact that there is a humanistic condition, a respect for the environment, a participation, an equity. A farmer might have his own perception, which can be very suitable for his own development, but extension integrates into the development of a country.

- FAO estimates that food production will need to nearly double to meet the surging demand caused by a population increase from 7-billion to 9.3-billion by 2050. They also expect an increase of 3-billion progressing into the more affluent middle class. If food is to almost double production to meet national food security there will not be just one lone "smoking-gun" type of solution. Waste will have to be addressed (today 30% of calories produced are wasted); Productivity will have to be addressed (today USA and South America produce 3 to 4 times the productivity in corn and soy as compared to Africa and India. We should share and train in Best Practices and Innovative Products need to be addressed that offer farmers products that empower them to increase their current production and, at the same time, reduce their environmental footprint. It's all about producing more with less in an environmentally and socially responsible way.
- With support from development partners, we have developed an innovative, cost-effective methodology to catalyze rapid uptake and use of proven agricultural technologies for improved food security among large numbers of small farmers. Our principal aim of FIPS-Africa is to broaden farmers' knowledge and improve their access to appropriate high yielding farming methods and inputs. FIPS approach can be described as a private extension and advisory system of self-employed Village Based Advisors (VBAs). The VBAs are hardworking, entrepreneurial farmers living locally who offer farmers access to a range of agricultural inputs and deliver advisory services through visits to individual farmers in a village approach and through field days and demonstration plots on their own lands where farmers have a chance to learn by doing on their own land. The VBAs thus serve as intermediaries between smallholder farmers and the agricultural private sector and agricultural research with the FIPS Africa office playing a strong coordinating role.
- As One Acre Fund grows, provision of our core model has helped us to develop additional core competencies in areas such as R&D, input distribution and agriculture microfinance. Increasingly, we are exploring ways to partner with governments; sharing our learnings and best practices in order to fill in the gaps in existing government-operated agriculture extension networks.
- Private Sector is ready to invest in Africa, but we can't do it alone. The only way this can happen is with donor funding and private sector funding working hand in hand on the same project. Corporate and private profit is not a dirty word, it is the key to extension sustainability.

6. Key Takeaways

Public support to fund extension programs has dwindled over the past decades. Meanwhile, rapid changes in global food markets in recent years have prompted private companies (for-profit and non-for-profit) to take a more active role in the provision of extension services. Today, traders, retailers and input suppliers alike have expanded their supply chain responsibilities, investing and engaging with smallholder farmers around a number of quality and productivity goals, and responding to pressure from non-governmental organizations (NGOs), consumers, regulatory agencies and governments to expand supply chain transparency from farm to final consumer product. Private extension initiatives (including public-private partnerships led by food companies and NGOs) are rapidly expanding worldwide as a result. However, little is known regarding appropriate approaches for the private provision of extension services to smallholder farmers in developing countries. In response, we conducted a detailed study to characterize emerging extension models led by private organizations worldwide. We offer a conceptual framework to explain how 1) contextual factors, 2) organizational characteristics, 3) partnership arrangements and 4) extension activities influence the performance of private sector extension models. We received survey responses from 101 different organizations (a response rate of over 25%) engaged in extension activities in 42 countries, spanning extension programs in Africa, Asia, Pacific Islands and Latin America. The extension and advisory services that these organizations provide reach more than 3.3 million farmers worldwide.

Our findings indicate that there is a high degree of heterogeneity regarding the objectives, strategies, and tactics of privately-led extension initiatives targeting smallholder farmers. Nevertheless, it is possible to identify certain extension service-related characteristics that are associated with specific goals using quantitative analyses.

Quantitative analysis on the likelihood of achievement of good progress towards stated goals reveal certain organizational characteristics that are potential determinants of success (Table 3). It is interesting to note that these determinants vary from one kind of goal to another. Performance on “production” oriented objectives such as increased productivity, increased quality and reliable market supply are strongly associated where private businesses controlled the majority of funding and implementation of extension programs. Conversely, performance in farm business management and market access is negatively associated with NGO implementation, suggesting that private businesses and social entrepreneurships are relatively more effective in the implementation of extension programs targeting supply increases. On the other hand, mean performance scores on “social” objectives do not clearly reveal an advantage to private implementation. Although reduction of poverty and improvement of farmer livelihoods is weakly associated with private and shared implementation, the improvement of conditions of marginalized groups is strongly associated with NGO funding.

From Table 3 we also find a relation between an extension provider’s role in the value chain and performance scores on objectives that are directly related to their role. For example, downstream organizations (that are engaged in distribution of agricultural produce to processors and final consumers) are more effective at achieving goals related to product quality while upstream organizations (that are engaged in the supply of inputs) are more effective at achieving goals related to technology adoption. Organizations that were successful overall, across different objectives, were more likely to be those that lent outside support to the value chain by providing consultancy services and certification.

Stated Goal/Outcome	Determinants of Superior performance
Increase productivity	- Majority Private funding, + Majority Private Implementation
Improve product quality	+ Downstream, ++ Majority Private Implementation
Increase market access	- - Majority NGO Implementation
Provide reliable supply	++ Majority Private Implementation
Improve quality of life for farmer	+ Support
Better environmental management	- Majority NGO Implementation
Better farm business management	- Shared Implementation, - Majority NGO Funding
Technology adoption	+ Upstream, + Majority NGO Implementation
Reduce poverty	+ Majority Private Implementation,
Improvements for marginalized groups	+ Shared Implementation, ++ Majority NGO funding,
Successful Overall (very good performance in more than 50% of targets)	- Producer, + Support

Note: '+' is positive association with improved performance of the goal; '++' is strong positive association with improved performance of the goal; '-' is negative association with improved performance of the goal; and '--' is strong negative association with improved performance of the goal.

Table 3: Determinants of Success by extension Objective

Our analysis across various aspects of extension including objectives, activities, tactics, organizational structure and performance, has enabled us to both understand the complex actors in privately-led extension systems today, as well as identify the major differences between them. We broadly categorize our respondents on the basis of the influence of organizational aspects such as funding, implementation and engagement of partners, into three major organizational types – those characterized largely by a) private business control, b) NGO control and c) partnerships and shared control. The compiled evidence in Table 4 points to certain unique strengths and weaknesses of each organization type.

Private Business Control	NGO Control	Partnerships and shared control

• Prime Strengths
  • Use of non-traditional extension methods
  • Use of ICTs
• Prime Weaknesses
  • Little external evaluation
	• Prime Strengths
	  • Broader extension objectives
	• Prime Weaknesses
	  • Lagging behind in use of newer methods
		• Prime Strengths
		  • Traditional extension with better performance
		• Prime Weaknesses
		  • Need to broaden extension objectives to keep up with NGOs

Table 4: Estimated Strengths and Weaknesses of Organization Types

a) *Private business control:* Organizations where private businesses controlled majority of the funding and implementation were found to be more innovative with their extension approaches and showed a far wider adoption of ICTs and tactics such as farmer-buyer and farmer-farmer networking. These businesses primarily targeted production related direct outcomes of productivity, quality and supply. These organizations also reported relatively higher rates of achievement of these outcomes, but were much less likely than NGOs to have received formal independent and external evaluations of the impacts of their extension.

b) NGO control: Organizations majorly funded and implemented by NGOs were much more likely to target social development related objectives in their extension approach. Although NGOs' self-evaluated performance did not show a high level of accomplishment of these objectives, they are long term outcomes and subject to multiple exogenous factors. NGOs were also far more likely to have their performance externally evaluated. However, NGOs mostly used traditional extension tactics such as demo plots, lead farmer programs and lagged behind other organizations in the adoption of ICTs, communication technology and tactics enhancing coordination across the value chain.

c) Partnerships and shared control: Organizations with equitably mixed funding and implementation across both private and non-governmental actors also lagged behind private businesses in the adoption of innovative tactics and forms of communication. However, self-reported performance levels in these organizations reflected a much better rate of accomplishment of production related outcomes than NGOs. These organizations tend to not focus on social and community development objectives to the extent that NGOs have embraced them.

6.2 Takeaways from Workshop Discussions with Selected Organizations that Responded to the Survey

There were a number of key takeaways from the actual workshop discussions with selected survey respondents. They are summarized as follows:

1. How to sustain the involvement of the private sector with an EAS model that focuses on smallholder farmers
    - Patrick Struebi's (Fairtrasa) idea was to have different fee structures for larger and medium sized farming operations that could subsidize activities for the smallholders so that the smaller producers could have some "market intelligence" or access to credit/resources that could help them grow.
    - John Deere's representative made the point that there needs to be actual working relationships between corporate and donor partners rather than one of the partners providing financing under a contract or cooperative agreement but not actively participating in the actual project to help to achieve the proposed improvement or growth of the smallholders involved in the project. He implied that the larger private sector companies are waiting for international donors such as USAID to shift some resources away from the traditional international development awardees such as the Chemonics or the Winrock International companies or the innovative NGOs such as Root Capital or One Acre Fund and work more directly in a more flexible approach. One example of this cited was the option of USAID matching grants with corporate partners. This was proposed and planned with the meeting John Deere was organizing with other corporate partners with USAID shortly after the June 2nd MEAS event. His point was that USAID and other large donor institutions are not seriously considering providing resources to corporate partners as they view potential corporate partners as not in need of their support and collaboration.
2. Another theme mentioned as a result of the survey responses but also reinforced with organizations such as Root Capital is that there seems to be more emphasis with the private sector approach to EAS, on providing financial assistance and value chain market connections than on the classic training model of extension.
    - Private sector extension is more interested in providing financial assistance in the growing season and providing strong markets for the farmers than teaching them how to farm. However there is an interest in selling their equipment, technologies and inputs with the financial packages they are providing in a market driven approach.
    - It might be an evolving stage of PPP where government and universities take on specific roles of training but in an active partnership with private sector that then handles the financing and marketing of producers who have been trained thru the public side of the partnership.
3. One important point of discussion was what is driving the PPP model that is so diverse in its goals and strategies. As was noted in general economists are not optimistic about such a wide spread approach of resources concentrating on so many different areas.
    - What may be contributing to this is the reality among the EAS actors that for there to be stability and sustainability in an EAS model for smallholders and their families there are both push and pull factors that need to be considered. It is not enough to concentrate only on production if there are a multitude of social, environmental and political factors that may create instability if not addressed.

4. Even though the impact of the participatory approach is so ephemeral so as to make it very difficult to measure, it is the participation of farmers in decision making that builds the partnership and ultimately the social capital that leads to trust and cooperation.
    - In this ever changing world of climate change and political upheaval an extension agent is more than a technical assistance provider to smallholders and their families. The extension agent's advice must be trusted when crops are affected by abrupt climate change.
    - The extension agent beyond providing technical assistance and production expertise must also assume multiple roles with the small farmer and his or her families. These agents are often the most tangible link for these families to cope with a wide variety of issues such as how to turn over the family farm to their children, how to face the political turmoil or open conflicts in their regions or to learn to use technology with little education or experience with ICT. The extension agent must be a social worker, adviser to youth, and the bridge for these families to find the way to unite their resources and join organizations.
    - Smallholders who are not connected to some organizational development will not have the strength alone to be part of a value chain as their production and quality control will not be adequate to meet market demands.
    - The participatory approach builds the trust and cooperation for farmers to associate and form organizations that allow them to leverage resources and become players in value-added markets.

6.3 Primary Keys and Barriers to Success, and Overall Key Takeaways

The key factors to success can be summarized as follows (specific examples are provided in Appendix II):

1. The use of participatory and contextual approaches
    - Builds trust and long-term relationships with farmers
    - Responsive to local conditions and farmer concerns
    - Develops long-term institutional partnerships
    - Emphasizes local staffing
    - Encourages two-way knowledge sharing

    As one respondent stated, "There is not any extension model that we can transfer from somewhere else. We should develop the model according to the social, institutional, technical, economic, infrastructure, etc. situation of the region. We should try to use resources of the region as much as possible but in an effective way. Participation, transparency at all levels."
2. Technical assistance is embedded in the structure of the supply chain
3. Extension activities use existing nodes of connection and communication channels to reach farmers.
4. Extension arrangements go beyond a single cash crop to support holistic farm management and opportunities for diversified production.
5. Integrated extension activities address challenges along the entire value chain.

6. Consistent metrics and methods for evaluating success are shared across organizations, sectors and industries

The key barriers to success can be summarized as follows:

1. Lack of financial resources
2. Inadequate extension coverage
3. Low literacy and education levels among farmers
4. Other key barriers to success include:
    a. Lacking coordination: duplication of efforts, poor communication, conflicts between public and private organizations
    b. Extension is overextended with too many responsibilities
    c. Land tenure issues
    d. Gender bias against women
    e. Approaches that exclude the poorest farmers
    f. Corruption/bad business practices

Future Opportunities can be summarized as follows:

1. Existing nodes of connection can be leveraged to reach farmers
2. Extension activities can provide information (market intelligence) about the needs of small farmers to private suppliers
3. Private suppliers can use CRM processes to gather metrics for tracking extension success
4. Modern communication technologies
5. Local processing, value-added products

Overall, the key takeaways from this study are as follows:

1. Multifaceted nature of extension - Multiple objectives and multiple approaches are common, regardless of region or organizational type
2. Extension priorities - Production-oriented goals tend to be prioritized (e.g. productivity, supply reliability
3. Institutional arrangements - Heterogeneous arrangements for funding and implementation include single-actor and multi-actor models; and more public-private collaboration in funding than in implementation
4. Self-assessment of outcomes –
    a. More progress toward achieving farm-level goals related to production and market access;
    b. Less progress toward achieving social (e.g. poverty alleviation) or environmental goals; more progress in Asia and the Pacific than in Africa and Latin America
5. Extensions tactics and keys to success –
    a. Provision of financial services and farm management training appear to substantially advance several goals;
    b. Participatory approaches are mentioned as key to success, but how to measure their impact on outcomes is yet to be determined;
    c. Increased coordination between private sector corporate actors and international donors working in tandem may lead to extension sustainability;
    d. Emerging Corporate Good philosophy toward development and Public Good may lead to increased cooperation between governmental extension and private sector extension actors.

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Appendix I: Survey Instrument

Examining Sector Extension Approaches that Target Smallholder Farmers in Developing Countries

This project is funded by USAID and conducted by researchers from Cornell University, University of Illinois at Urbana-Champaign and MEAS (Modernizing Extension and Advisory Services).

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INTRODUCTION

Extension can be defined as "the facilitation of knowledge access to farmers to improve their livelihoods and sustainability." Historically, government agencies have provided extension services for smallholder farmers in developing countries. However, rapid changes in global food markets have prompted private companies and NGOs to begin taking a more active role in the provision of extension services by investing and engaging with smallholder farmers around a number of quality and productivity goals. The purpose of this study is to understand emerging extension models led by private organizations (both for-profit and non-for-profit) that serve smallholder farmers in developing countries.

Primary Objectives of the Study:

1. Identify and characterize emerging extension models led by private organizations, including their objectives, methods and outcomes.

Use the findings to develop best practices and inform program development and implementation. The findings will be valuable for USAID, donors and private/public decision makers interested in increasing the profitable participation of smallholder farmers in food value chains.

Statement of Confidentiality

The aggregate findings of this study will be publicly available, as per USAID funding stipulations. While the report does not intend to collect explicitly confidential or strategically valuable information, it is important that participating organizations know that this report will be public information. **Names of**

individuals and organizations will be withheld, and data will not be able to be linked back to specific individuals or organizations in public reports.

I. General Information

Organization name:
Your name:
Your title:
Contact information (email, phone, skype):
Name of extension program or project:
Location (city & country):
How old is this extension program or project?

II. Organizational Structure

How would you classify your organization? Please select one option that best describes your organizational structure.	☐ Private Business ☐ Social Enterprise ☐ Grower Association or Cooperative ☐ Nonprofit or NGO ☐ Other: _____
Do you collaborate with any public entities to offer extension services?	☐ Yes ☐ No
If you are a commercial business or a grower association, what role does your organization play in agricultural or food value chains, if any? If you are a nonprofit organization or NGO, what component(s) of agricultural or food value chains do you target with your services, if any? Please select all that apply.	☐ Input supplier ☐ Production of agricultural products ☐ Aggregation of agricultural products ☐ Processing or packaging ☐ Transportation or storage ☐ Logistics and coordination ☐ Exporter ☐ Importer ☐ Buyer of processed products ☐ Seller (wholesale) ☐ Seller (retail) ☐ Provider of financial services ☐ Other: ☐ None

III. Partnerships

Who are your top three collaborators in delivering extension services?

For each partner, please indicate whether it is a public or private entity.

Partner Name	Public Entity	Private Entity
1.	☐	☐
2.	☐	☐
3.	☐	☐

For the partners listed above, please describe the role of each one in the provision of extension services.

	What is their role?
Partner 1	
Partner 2	
Partner 3	

Who is responsible for the following extension tasks? *Please check one box for each task.*

	Our organization is primarily responsible	Our partners are primarily responsible	We share this responsibility with our partners
Setting program goals	☐	☐	☐
Program design	☐	☐	☐
Program implementation	☐	☐	☐
Program evaluation	☐	☐	☐
Program funding	☐	☐	☐
Relationship building with farmers	☐	☐	☐

IV. Extension Activities

Where do your extension programs take place?

For the programs that you oversee, please list the location (country and region/municipality/community) where your extension activities occur. For each area, please provide the number of farmers that participate in your extension activities and the number of extension professionals that you employ.

Country	Region, Municipality or Community	# Professional Extension Educators	# Lead Farmers or Supporting Educators	# Participating Farmers

Who is your program audience? Please select all that apply.	☐ Subsistence farmers growing on up to 2 hectares of land ☐ Small farmers growing on up to 5 hectares of land ☐ Commercial farmers growing on 5 to 10 hectares of land ☐ Commercial farmers growing on over 10 hectares of land ☐ Women farmers or landless rural women ☐ Rural youth ☐ Other:
What crops are typically grown by your program participants?	
Are participants growing primarily for home consumption or for sale?	☐ Home consumption ☐ For sale to domestic markets ☐ For sale to international markets ☐ Other:

Please describe the overall goal or mission of your agricultural extension services.

What are the main functions of your extension program?

To the best of your knowledge, please estimate the percentage of your total effort or total resources that is associated with each function. If a function is not applicable to your work, please leave it blank.

Primary Extension Functions	% of Total Extension Effort
Agricultural Production & Technical Assistance	
Business Development	
Value Chain Development & Market Access	
Financial Services	
Education & Empowerment	
Health & Food Security	
Environment & Natural Resources	
Community Development & Institutional Capacity Building	
Humanitarian Relief	
Research & Development	
Other:	

TOTAL	100%

What methods do you use in your extension activities?

To the best of your knowledge, please indicate the approximate length of time that your organization has been implementing this approach, and whether farmer participation has been increasing, decreasing or stable over time.

Extension Approaches & Frameworks	Years in Existence	Change over Time Please check the appropriate box.
Individual farm visits		☐increasing ☐decreasing ☐stable
Office hours for farmers to attend		☐increasing ☐decreasing ☐stable
Group trainings in farm communities		☐increasing ☐decreasing ☐stable
Demonstration plots		☐increasing ☐decreasing ☐stable
Farmer field school		☐increasing ☐decreasing ☐stable
Identifying & training lead farmers		☐increasing ☐decreasing ☐stable
Training of trainers		☐increasing ☐decreasing ☐stable
Providing agricultural inputs		☐increasing ☐decreasing ☐stable
Training connected to provision of inputs		☐increasing ☐decreasing ☐stable
Participatory research		☐increasing ☐decreasing ☐stable
Farmer-to-farmer networking		☐increasing ☐decreasing ☐stable
Farmer-to-buyer networking		☐increasing ☐decreasing ☐stable
Small enterprise development		☐increasing ☐decreasing ☐stable
Organizing & strengthening producer groups		☐increasing ☐decreasing ☐stable
Contract farming		☐increasing ☐decreasing ☐stable
Access to credit		☐increasing ☐decreasing ☐stable
Savings initiatives		☐increasing ☐decreasing ☐stable

Other financial services		☐increasing ☐decreasing ☐stable
Integrated agriculture and business development		☐increasing ☐decreasing ☐stable
Information communication technologies (ICTs)		☐increasing ☐decreasing ☐stable
Value chain development approaches		☐increasing ☐decreasing ☐stable
Linking farmers to markets		☐increasing ☐decreasing ☐stable
Other:		☐increasing ☐decreasing ☐stable

What types of communication technology do you use to deliver extension services? Please select all that apply.	☐ Printed handouts for program participants ☐ Print media (newspapers, magazines, newsletters) ☐ Radio ☐ Television ☐ Internet (websites, blogs, etc.) ☐ Social media (Facebook, Twitter, Instagram, etc.) ☐ Email ☐ Mobile networks (texting) ☐ Other:

What type of transportation do your extension educators use to visit farms?

To the best of your knowledge, please estimate the percentage of the total travel that is associated with each transportation type. If a transportation type is not applicable to your work, please leave it blank.

Primary Mode of Transportation	Approximate % of Total
Company automobile	
Personal automobile	
Motorcycle	
Bicycle	
Bus	
Taxi	
Walking	
Horse or other animal power	
Other:	
TOTAL	100%

What funding sources support your extension programs?

Please list the approximate percentage of your total extension budget associated with each funding source. If a funding source is not applicable to your work, please put zero in the budget column.

Funding Source	% of Total Extension Budget
Farmer fees for extension services	
Membership fees collected by farmer organizations	
Business sector funding (private companies)	
Public sector funding (government entities)	
Non-for profit funding (NGOs or foundations)	
Donations from private individuals	
Other:	
TOTAL	100%

What are your strategies for making extension affordable and cost-effective?

V. Extension Educator Training

What is the typical level of education for your extension educators? Please select one option.	☐ Primary education ☐ Secondary education ☐ Post-secondary technical education ☐ College education ☐ Graduate school education ☐ Other (please explain):
Do your educators tend to have highly specialized training in one field or more general training in several areas?	☐ Specialized training in one discipline ☐ General training in many disciplines ☐ Specialized training in one discipline and general training in other disciplines ☐ Other (please explain):
How frequently do your extension educators receive ongoing training (refresher courses)?	☐ Weekly - 1 or more trainings per week ☐ Monthly - about 1 to 3 trainings per month ☐ Bimonthly - about 3 to 6 trainings per year ☐ Annually - about 1 to 3 trainings per year ☐ Infrequently - less than once per year
Are your educators connected with any universities, donor-funded programs or other organizations that provide ongoing training?	☐ Yes ☐ No If yes, please list partner organizations that provide extension educator trainings:

What specialized skills or knowledge areas are key priorities for your extension educators?

Please rank the importance of each skill area on a scale of 0 to 3:

3 = high importance 2 = moderate importance 1 = low importance 0 = not applicable

Priority Area	Importance (0 to 3)
Agronomy (crop science, soil science, animal science, agricultural engineering)	
Business management and entrepreneurial skills (accounting, finance, marketing)	
Sustainable agriculture and natural resource management	
Education, teaching and farmer training	
Community organizing	
Research	
Working with marginalized groups	
Other:	

VI. Objectives & Outcomes

How does your organization evaluate its extension programs? Please select one option.	☐ Formal evaluation process ☐ Informal evaluation process ☐ Both formal and informal evaluation processes ☐ No evaluation process ☐ Other (please explain):
Are your program evaluations conducted internally or externally? Please select one option.	☐ Internally – our programs are evaluated by staff within our organization ☐ Externally – our programs are evaluated by another organization ☐ Both – we conduct both internal and external program evaluations ☐ Other (please explain):
Does your evaluation process incorporate feedback from farmers and program participants?	☐ Yes ☐ No If you answered "yes" to this question, please describe how you gather feedback from farmers and program participants:
What are your intended program outcomes? Please consider specifically the intended outcomes for small farmers. Select all that apply.	☐ Increased productivity ☐ Increased product quality ☐ Increased market access for farmers ☐ Reliable supply of agricultural products ☐ Improved quality of life for farmers ☐ Improved environmental management ☐ Improved farm business management ☐ Technology adoption ☐ Climate change adaptation ☐ Poverty reduction ☐ Improvements for marginalized groups ☐ Other: _____ ☐ Other: _____

How would you rate your progress toward reaching your various program outcomes?

Please check one box for each outcome.

	Outstanding	Very Good	Good	Limited	Needs Improvement	n/a
Increased productivity	☐	☐	☐	☐	☐	☐
Increased product quality	☐	☐	☐	☐	☐	☐
Increased market access	☐	☐	☐	☐	☐	☐
Reliable supply of agricultural products	☐	☐	☐	☐	☐	☐

Improved quality of life for farmers	☐	☐	☐	☐	☐	☐
Improved environmental management	☐	☐	☐	☐	☐	☐
Improved farm business management	☐	☐	☐	☐	☐	☐
Technology adoption	☐	☐	☐	☐	☐	☐
Poverty reduction	☐	☐	☐	☐	☐	☐
Improvements for marginalized groups	☐	☐	☐	☐	☐	☐
Other:	☐	☐	☐	☐	☐	☐
Other:	☐	☐	☐	☐	☐	☐

VII. Best Practices

The following questions are intended to gather information that will help to identify best practices and future opportunities for private extension and advisory services targeting smallholder farmers.

Keys to Success Based on your experience, what are two or three key elements of successful extension programs?
Barriers to Success Based on your experience, what are two or three shortcomings of current extension programs?
Future Opportunities Where do you see opportunities for growth and future development of extension activities?
Scaling Up Which of your extension programs could be successfully replicated in other communities? What recommendations would you have for successfully scaling-up your extension programs?
Financial Sustainability How can extension programs be sustained financially over time?

Final Thoughts Please share any additional thoughts or information about your model for extension services that will help us to understand its strengths, challenges, opportunities and the potential for future impact.

Thank you!

Your participation in this survey is of great value to our study. Thank you for helping us to document private-led extension activities and understand how they operate.

Presentation of Results

The results of this study will be presented in a written report and also shared at a 1-day workshop sponsored by MEAS in Washington DC on June 2, 2015. Please indicate whether you would like to receive more information about the workshop, and whether you would like to receive a copy of the final report by email.

- ☐ I would like more information about the MEAS workshop in June.
- ☐ I would like to receive a copy of the final report by email.

Additional Survey Participants

Do you know of any other private organizations involved in extension activities that might be good candidates for this study?

We appreciate your suggestions and any contact information you can provide for such organizations.

Appendix II: Innovative Extension Models

Box 1. Extension Provided by Input Suppliers

In one example of this model, the nonprofit Cultivating New Frontiers in Agriculture (CNFA) has trained and certified over 7,000 small agrodealers in East Africa and Mali. CNFA reports that its agrodealer network has served over 3 million farmers and improved food security for more than 17 million people (CNFA 2015).

Another example, the USAID-funded Production, Finance, and Improved Technology Plus (PROFIT+) program in Zambia, relies on a partnership between nonprofit implementation partner ACDI/VOCA and the International Fertilizer Development Center (IFDC) to strengthen a network of for-profit agricultural input and service providers serving over 100,000 farmers. This model relies on agents, typically farmers from the communities they serve, who act as intermediaries between small farmers and their input supplier. Agents take orders, deliver supplies, manage transactions and also provide product knowledge and support. On average, maize production rose by 82% and sales increased by 161% for farmers active in the PROFIT+ program (DAI 2010).

Box 2. Extension Provided through Contract Farming

Empirical evidence form a study in China's Shandong Province showed that contract farming arrangements resulted in higher yields for apple growers, and higher prices for onion growers, due in part to increased technical assistance. The authors conclude that "contract farming can help small farmers raise their incomes and gain access to the growing urban and export markets" (Miyata, Minot, and Hu 2009).

Box 3. Extension as a focus of Corporate Social Responsibility

Through a partnership with TechnoServe, John Deere began piloting an innovative mobile classroom for educating and training farmers in Ghana and Kenya. Since 2014, the mobile training unit – a large truck with an embedded video screen and audio capabilities – has been involved in a two-component program. In comparison to other extension services devoted to farmer training, John Deere's innovative approach brings the training to farmers rather than the farmers to the training centers. After a particular rural community registers for the opportunity to attend, the mobile classroom visits four to six times per year in order to educate the local farmers on various topics, a different topic each time. Topics include but are not limited to land preparation, crop planning and rotation, financial accounting, and marketing agreements. In the second part of the program, TechnoServe exhibits by means of demo plots what has been taught in the mobile training unit, allowing farmers to see first-hand an application of the information they have received. The results have been favorable for the mobile classroom due to applicable pacing, customizable lessons, and community-oriented interests.

Box 4. Social Enterprise Incorporates Extension into a Business Model

Fairtrasa has combined business, social outreach, and sustainable environmental practices into their Three Tier development model which focuses on assisting small-scale farmers of varying levels of development and independence. In order to help farmers of Tier 1 (subsistence) and Tier 2 (semi-independent) reach Tier 3 (independent exporters and agro-entrepreneurs) as well as support Tier 3

farmers through the export process, this model offers customized extension services according to tier, including but not limited to training programs on organics and yield optimization; crop development, expansion, and re-investment strategies; guidance in establishing cooperatives; and financing (Fairtrasa 2015). The incorporation of the fair-trade system within the Three Tier development model offers monetary aid to education, medical clinics, and infrastructural projects in the local and rural communities with each box of fruit sold by farmers within the cooperative. Furthermore, because Fairtrasa focuses on organic agriculture, the practices advocated not only help the farmers grow healthier foods but also benefit the environment.

Box 5. Nonprofit Extension Targeting Marginalized Groups

Targeting smallholder farming communities currently in the process of becoming Rural Association Enterprises, the Borderlands Coffee Project provides commercial, logistic, managerial, organizational and technical support to farmers living in Nariño, Colombia in order to improve livelihoods. With the construction of Community Benefit Centers (CBC), the Borderlands Project guarantees coffee quality while simultaneously minimizing ecological impact during processing and promoting sustainable agro-industrial practices, research and development, technological innovation and the expansion of local capacity. Furthermore, the project helps strengthen the coffee production system in terms of resilience, safety, and food sovereignty, improve the effectiveness of farmer participation in the coffee value chain, and establish fair business relationships in order to generate higher incomes for coffee grower families.

Box 6. Extension Supported by International Research Centers

Since its beginning in 2010, the Rwanda Sweetpotato Superfoods Project as part of the International Potato Center's (CIP) larger Sweetpotato Action for Security and Health in Africa (SASHA) Project has been supporting and promoting farmers of the sweet potato by providing them with clean planting material and introducing new varieties of the orange-fleshed sweet potato. The project is a collaboration between CIP and local partners including the Rwanda Agricultural Board (RAB), Catholic Relief Services (CRS), IMBARAGA, Young Women's Christian Association (YWCA) and SINA Gerard Urwibutso Enterprises. SINA – as the main processor for the project – provides the farmers with a market for the sweet potato roots upon harvest, ensuring the profits for their crops. The Sweetpotato Superfoods in Rwanda Project has been enacted with the purpose of improving through agriculture the lives of 10 million Sub-Saharan households over the course of ten years as part of SASHA's Sweetpotato for Profit and Health Initiative (SPHI).

Box 7. Extension Provided by National Farmer Associations

The National Wool Growers Association of South Africa is an organization comprised predominantly of communal farmers represented on all structures of the wool industry. The mission of the NWGA is to promote sustainable and profitable wool sheep farming through promotion of improved policy and legislation, promotion of efficient production, promotion of improved markets, and promotion of strengthened institutional environments supporting the wool industry. In addition, the National Wool Growers Association focuses on ensuring equitable access and participation of all wool producers, improving the profitability and competitiveness of wool sheep farming, expanding the wool industry, creating and securing jobs, and ensuring sustainable natural resource utilization. Depending on whether the area is commercial or communal, the NWGA Production Advisory Service offers a large variety of extension including but not limited to Farm Business Management Information Service, training (in the

form of courses, demonstrations, and lectures) in areas such as shearing and wool classing, discussion forums, individual visits, information days, management plans and data feedback, competitions and exhibitions, and development of cooperatives.

Sources:

- www.fairtrasa.com/
- http://cipotato.org/press-room/blogs/sweetpotato-biscuit-video-commercial-launched-in-rwanda/
- http://sweetpotatoknowledge.org/projects-initiatives/sasha/sasha-2011-flyers/FS-SASHA8_Rwanda%20SuperFoods%202011%20YR2.pdf
- www.nwga.co.za/home-mainmenu-1/about-us/about-the-nwga.html
- www.nwga.co.za/images/downloads/Business_plan_2013%202014.pdf

Appendix III: Online Supplementary material

This workshop presentation by Dr. Miguel Gomez and Mr. Benjamin Mueller was part of the MEAS supported research project entitled "Examining Privately-led Extension Approaches Targeting Smallholder Farmers in Developing Countries." The workshop was held on June 2, 2015 in Washington DC and preceded the three-day Modernizing Extension and Advisory Services (MEAS) Symposium that took place June 3-5, 2015.

Full-length video

Private Sector Extension Activities Targeting Smallholder Farmers by Miguel Gomez and Benjamin Mueller http://meas.illinois.edu/ppp-resources/

This workshop presentation by Dr. Miguel Gomez and Mr. Benjamin Mueller was part of the MEAS supported research project entitled "Examining Privately-led Extension Approaches Targeting Smallholder Farmers in Developing Countries." The workshop was held on June 2, 2015 in Washington DC and preceded the three-day Modernizing Extension and Advisory Services (MEAS) Symposium that took place June 3-5, 2015.

Innovators from private sector NGOs and companies who provide extension activities to small holder farmers around the world participated in the day-long event. Forty-three representatives from nongovernmental organizations, public institutions, private sector companies, and donor organizations presented and discussed a range of topics, which included research and knowledge transfer, technology adoption, value chain markets, as well as the key features and characteristics of sustainable extension and advisory services (EAS) models in developing countries, including those poorest nations targeted in the US Government Feed the Future global initiative.

Dr. Gomez of Cornell University and Mr. Mueller from the University of Illinois at Urbana-Champaign shared their research methods and preliminary results of quantitative and qualitative investigation of privately-led extension approaches that target smallholder farmers in developing countries.

Presentations

1. Examining Actors in Privately-led Extension in Developing Countries (http://bit.ly/1JMoNlo)
2. Examining Privately-led Extension Approaches Targeting Smallholder Farmers in Developing Countries: Preliminary Findings (http://bit.ly/1OUJqeb)'

Interviews

Please visit the MEAS PPP Resources webpage to listen to audio interviews of leaders in the Private Sector: http://meas.illinois.edu/ppp-resources

Included are the following individuals:

1. Elizabeth Teague from Root Capital
2. John Anderson from John Deere
3. Patrick Streubi (Fairstrasa)
4. Carlos Uribe (FNC)