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Enabling rural innovation in Africa: An approach for integrating farmer participatory research and market orientation for building the assets of rural poor

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Abstract

Agricultural research and development organizations are increasingly under pressure to shift from enhancing productivity of food crops to improving profitability and competitiveness of small-scale farming, and linking smallholder farmers to more profitable markets. What is not obvious however, is how to make small-scale farming more market orientated, and how to effectively integrate participatory research approaches to marketing and agroenterprise development. This paper outlines an integrated approach for demand-driven and market-orientated agricultural research and rural agro-enterprise development. This approach termed Enabling Rural Innovation (ERI) offers a practical framework to link farmer participatory research and market research in a way that empowers farmers to better manage their resources and offers them prospects of an upward spiral out of poverty. ERI uses participatory processes to build the capacities of farmers' groups and rural communities in marginal areas to identify and evaluate market opportunities, develop profitable agroenterprises, intensify production through experimentation, while sustaining the resources upon which their livelihoods depend. The approach emphasizes integrating scientific expertise with farmer knowledge, strengthening social organization and entrepreneurial organizations through effective partnership between research, development and rural communities. By strengthening human and social capital, ERI encompasses effective and proactive strategies for promoting gender and equity in the access to market opportunities and improved technologies, and in the distribution of benefits and additional incomes.. Results of action research applying the ERI approach in pilot sites in Malawi, Uganda and Tanzania show that small-scale farmers are not always attracted by higher economic returns. Rather they use a range of economic and non-economic criteria for selecting their existing crops and livestock for new markets, as well as new crops for new markets. Evaluation of market opportunities stimulates farmers' experimentation to reduce risks, access new technologies, and improve the productivity and competitiveness of the selected enterprises. Lessons learned suggest that building and sustaining quality partnerships between research and development organizations, government, private agribusiness sector; and building necessary amount of human and social capital over a certain period of time are critical for achieving success in small- scale agroenterprise development. This however, requires that an explicit scaling up strategy be mapped out to link successful community processes to meso and macro level market institutions at the national and regional levels.

Key words: gender, participatory research, market opportunities, social capital, Africa, natural resource management, scaling up

Introduction

Over the year, agricultural research and development organizations have made significant progress on increasing agricultural productivity and promoting sustainable intensification of major food crops and livestock for small-scale farmers. Growing evidence and experience indicates that sustaining success in productivity-based agricultural growth critically depends on expansion of market opportunities (Diao and Hezel 2004; Gabre-Madhin and Haggblade, 2004; Haggblade, 2004) and requires thinking beyond productivity to incorporate profitability and competitiveness (Kaplinsky, 2000). It is now increasingly evident that smallholder farmers key concern is not only agricultural productivity and household food consumption, but also increasingly better market access. Virtually all the African farmers depend on trading for some household needs, and hence seek income generating activities. Enhancing the ability of smallholder, resource-poor farmers to access market opportunities, and diversify their links with markets is one of the most pressing development challenges facing both governments and nongovernmental organizations (IFAD, 2001; IFPRI, 2002; Kindness and Gordon, 2002). Linking farmers to growth markets is therefore an important strategy for improving the adoption of agricultural technologies, raising rural incomes and reducing poverty. However, until recently one critical gap in agricultural research and development has been its failure to link farmers to profitable markets and to increase incomes for marketing agricultural products.

Agricultural research and development have now recognized the need for a market driven, market-led or market orientated research. Virtually all the international agricultural research centres (CIAT, ICRAF, IITA, ICRISAT, CIP, IFDC etc.) have established market and agroenterprise development project in their programmes, and are experimenting with diverse approaches ranging from market information systems (IITA),

market chain analysis (CIP, ICRISAT), product development (CIP) inputs marketing (IFDC), and rural agroenterprise development (CIAT). Similarly, national governments in Uganda, Malawi and Tanzania are increasingly putting emphasis on transforming subsistence agriculture to make farming a business, and to an entrepreneur culture in rural communities, where farmers produce for markets rather than trying to market what they produce, to better understand how communities in diverse situations can best achieve their income and other livelihood aspirations through better links with markets. However, what is not so obvious is how to link small-scale farmers in marginal areas to expanding markets, and how to develop methods and approaches that effectively integrate research and marketing and enterprise development.

Many of the recent initiatives to link smallholder farmers to markets have largely focused on export markets as these are seen as important sources of economic growth (Jones et al., 2002; Hellin and Higman, 2002; GoU, 2003). However, many of these approaches tend to be top down and lack an effective process of community learning and empowerment. The decisions on what products and enterprises to develop, what markets to target are often prescribed by government agencies, private companies or development organizations. These organizations then conduct a commodity market chain analysis and organize production to meet identified market demand, often external export market. In Uganda, the government Plan for Modernization of Agriculture (PMA) emphasizes strategic interventions on traditional (coffee, tea) and non-traditional (potatoes, bananas, fish) cash crops targeting external international export markets (GoU, 2000). Similarly, in Malawi, the government has introduced the One Village One Product (OVOP) concept for external export markets.

These approaches have produced mixed results. While many studies have documented impressive results of linking farmers to export markets, It has been argued that smallholder farmers have rarely benefited from these initiatives, as niche markets tend to be highly competitive and specialized, with rigourous quality standards which can be challenging to many small scale farmers (Diao and Hezel, 2004). There are real risks that such market opportunities may be seized by a few large-scale commercial farmers to the expanse of small-scale farmers. On the other hand, domestic markets still represent a large and growing market that ought to offer real opportunities to small-scale farmers. Domestic demands for a diverse range of food and livestock products will continue to growth rapidly in Africa, offering small holder farmers new opportunities for diversification into high value products for domestic and regional markets.

Sayer & Campbell (2001) have concluded that sustained improvements to the livelihoods of poor tropical farmers require a different type of research, aimed at enhancing the capacity of the rural people to adapt to changing conditions, rather than at delivering 'finished' technologies. Clearly, farmers and communities need to be empowered to solve their own problems, and access technologies through methods that emphasize active participation and innovation (Hellin and Higmann, 2001; Sayer and Campbell, 2001). It takes continual experimentation, innovation and adaptation to changing environment for smallholder farmers to become more market oriented and remain competitive. Therefore, building farmers' and communities' capacity to identify and develop market opportunities and experiment through the application of innovative participatory approaches, is critical for creating a sustained collective capacity for innovation and for creating new alternatives for resource-poor farmers, especially women.

This paper proposes a different approach. Rather than prescribing enterprises and market links, our approach termed Enabling Rural Innovation (ERI) uses participatory processes to build the capacities of farmers, farmers' groups and communities to identify and evaluate market opportunities, develop profitable agroenterprise, intensify production while sustaining the resources upon which their livelihoods depend. ERI offers a practical framework to integrate farmer participatory research (FPR) and participatory market research (PMR) in a way that empowers farmers to better manage their resources (human, social, financial, natural) and offers them prospects of an upward spiral out of poverty. PMR provides a starting point for FPR, while FPR supports marketing and enterprise development to increase productivity, profitability, competitiveness and sustainability of selected enterprises. This approach, in which rural communities become active partners in processes of market opportunity identification, is based on a territorial or community approach to agroenterprise development (Ortertag, 1999) in which the enterprise options are selected by rural communities based on their assets and opportunities. It emphasizes integrating scientific expertise with farmer knowledge, strengthening social organization and entrepreneurial organizations through effective partnership between research, development and rural communities.

The paper is based on empirical results and lessons learned in implementing the ERI approach in pilot sites in Uganda, Malawi and Tanzania through effective partnership between international and national agricultural research organizations, development organizations, government extension services and rural communities. The rest of the paper starts by outlining the key steps and principles of ERI approach. The implementation of ERI is in the pilot sites is described following the key steps: building and managing partnerships; developing community visions of desired future conditions; market opportunities identification and enterprise selection; farmers' experimentation, building social capital and their implications for gender and equity issues, participatory monitoring and evaluation and strategies for scaling up. Lessons learned and their implications for research and development are discussed in the concluding section.

Key Principles and Steps of Enabling Rural Innovation

Rural innovation can be defined as "the process by which

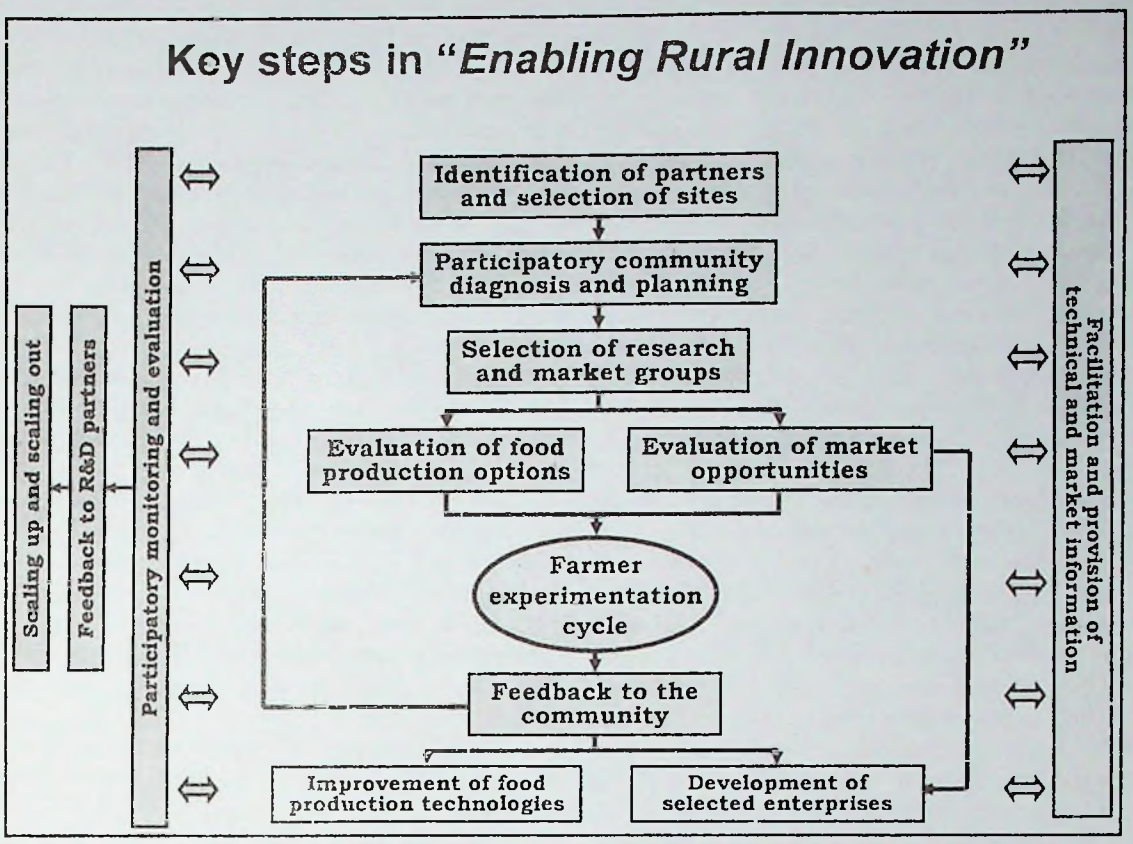


Figure 1: Key steps of ERI approach

various stakeholders generate, adapt or adopt novel ideas, approaches, technologies or ways of organizing, to improve on- and off-farm activities, so that the rural sector becomes more competitive in a sustainable manner" (CIAT, 2003). In more practical terms, ERI is a mutual, collective learning process for empowering rural communities to make informed decisions and creating the capacity of communities to (i) identify and develop sustainable enterprises that generate income and employment, (ii) generate and access information, knowledge and technology in support of their productive activities, and (iii) demand effective services to local support institutions and community organisations to provide an enabling environment that permits innovations to proceed

ERI is based on the Resource-to-Consumption (R-to-C) system (Kaaria and Ashby, 2001) that aims to build positive backward and forward linkages from the community assets (natural, human, social, physical and financial) to production, post-harvest handling, household consumption and processing while integrating scientific expertise with farmer knowledge. The R-to-C system expands conventional production to consumption or commodity chain approaches by explicitly basing decisions on what productive activities to engage in on the combination of community assets that will best meet the dual needs of household food production and income generation. It is hypothesized that the generation of additional income would provide incentives to invest in improving the natural resource base, on which the productive activities depend.

The broad principles and steps outlined in Figure 1 include

(a) Engagement of strategic partners, negotiating agreements and selecting pilot sites.
(b) Participatory diagnosis building on community assets and opportunities, rather than problems and constraints; to facilitate realistic community visioning of desired future conditions.
(c) Formation of farmer research group and market research group to select, test and evaluate marketing opportunities, technology options, and approaches to sustaining their natural resources;
(d) Participatory market research to identify and evaluate market opportunities for competitive and profitable crop and livestock products that will provide incentives for investment in improving the resource base;
(e) Prioritization and selection of agroenterprise and household food consumption options by gender and other socioeconomic categories, and identification of research questions for improving productivity and soil fertility management.
(f) These questions provide the basis for starting farmer experimentation cycle of planning, designing experiments, implementation, monitoring and evaluation, and feedback of results to the community and R&D research, as well as

identification of further research questions for farmers' experimentation and enterprise development strategies. In this process R&D partners have two critical roles to play:

(g) Facilitation of participatory processes and provision of technical and market information for better decision-making, building partner's and farmers capacity, and strengthening both bonding (organizational capacity, cooperation, collective action) and bridging (horizontal and vertical linkages) social capital of rural communities.

(h) Facilitation of participatory monitoring and evaluation processes for institutional learning and change, and upscaling with existing and new research and development partners.

Results and Discussion

The results of developing and applying ERI are presented following the main steps and principles outlined above

Building and managing effective partnerships

Innovation is not about hiring an Einstein or creating a slogan. Everybody is capable of it, and the first sign that it is happening is when people work together, excited because they want to be there, focused on finding a solution to a challenge they all understand." (Smit,2000). This view is supported by the innovation system view of the innovation process (Douthwaite et al., 2003), which sees rural innovation as a complex process being produced by a network of actors and stakeholders that co-evolve with the technologies and processes they generate. Successful innovations result from strong interactions and knowledge flows within networks of actors and partners with strong feedback loops.

A first step in implementing ERI is selecting, building and sustaining effective partnership. In the three countries, ERI involves at least 13 partners comprising of international and national agricultural research institutes, government extension services, non-governmental organizations, local administrations, and community-based organizations, bringing different strengths to the process. ERI has followed the principles for good practice in participatory research, and of quality partnerships and collaboration in research (Gormley, 2001; Vernooy and McDougall, 2003). The selection process followed an institutional assessment of potential partners who saw the value of incorporating ERI to complement their on-going research or development work, and who had institutional capacity for working with rural communities.

A key consideration for selecting partners was the potential for mutual learning and prospects for scaling out to more communities and to more partners and institutions. Some of the key partners actively participated in the initial phases of proposal development and planning. While project resources are shared with partners, in many cases, partners have committed their own resources for successful implementation of the project. The ERI partnership was awarded the GFAR 2003 merit award, for the best poster on successful partnerships in agricultural research for development.

However, it is important to note that managing and sustaining effective quality partnership is challenging. For example, in one case, after about a year of collaborative work, an NGO partner decided to move from sustainable development interventions to relief and humanitarian work and was therefore no longer able to partner in ERI. Therefore, to maintain momentum and to fulfill the expectations created within the communities, it was necessary to find an alternative partner, in this case government extension services, to take over the responsibilities and roles of the initial NGO. Given the diversity of partnerships required to achieve rural innovation and linking farmers to markets, finding the right balance between research and development, and partners committed to both has been challenging. Other challenges include, staff turn over, over-committed staff, lack of partnership competencies, communication and personality issues. These are often resolved through face-to-face interactions and negotiations of explicit memoranda of understanding, workplans and budgets. Building partners' capacity in ERI concepts, principles, tools and methodologies through regular training events, mentoring, joint planning and review meetings have been critical in building necessary human and social capital and sustaining institutional commitments.

ERI is focusing initially on a number of selected villages in pilot areas in Malawi, Tanzania and Uganda (Table 2). Baseline studies conducted in the pilot sites revealed varying levels of poverty and wealth categories across and within sites. Of the three countries, farmers in Tanzania tend to be relatively better off, enjoying high income and other assets. Poverty was most acute in Dedza, Malawi, while Uganda represents a situation of moderate poverty. In all sites, agriculture was the predominant economic activity. Farmers in Tanzania tend to have the most diverse portfolio of crops, including at least seven crops grown exclusively for sale. By contrast, in Uganda and Malawi, farmers grew some crops mainly for subsistence, and only relied on one or two crops exclusively for cash (David, 2004)

The ERI partnership involves 19 farmer groups and communities of variable sizes, and over 1000 households in the three countries. The selection of the pilot sites communities was based on a combination of a number of criteria, including opportunities for adding value to ongoing research and development activities, good potential for scaling out to other villages, presence of active farmers groups or local social organizations; and presence of an active extension or development worker with sufficient motivation and skills (or willingness to learn) to be a community development facilitator. In some pilot sites, we chose to work with the whole community in a more inclusive process (100-250 households); while in others, the strategy was to build on small, pre-existing and well-led farmer groups (15-40 members) that enjoy long-term social capital (cohesion and effectiveness) rather than creating and forming new groups. In both cases, one of the key objectives

Table 1 Description of pilot sites and Partners

	Uganda	Tanzania	Malawi
Sites (Districts)	Kabale, Masindi, Tororo	Lushoto, Hai	Dedza, Ukwe, Kasungu
Absolute poverty level of population	Moderate	Moderate	High
Market orientation	Moderate	Moderate	Low
Access to roads	Good	Average	Good
Main crops/farming systems	Potato, beans, sorghum, cabbage	Beans, maize, coffee horticulture (tomatoes, fruits, pepper)	Maize, beans
Rainfall pattern	Bimodal	Bimodal	Unimodal
Partners	National Agricultural Research Organization (NARO) Africare-Uganda Food Security Initiative (Africare/UFSI) Africa 2000 Network (A2N) Action Aid Vision for Rural Development Initiatives (VIRUDI) African Highlands Initiative (AHI)	Traditional Irrigation and Environmental Development Programme (TIP) Africa Highlands Initiative (AHI) District Agricultural and Livestock Development Office (DALDO) World Vision-Sanya Agricultural Development Programme (Sanya ADP)	Department of Agricultural Research Services (DARS) Lilongwe Agricultural Development Division (LADD) Plan International.
Number of groups/communities	8	7	5

Table 2: Products-Market Growth Matrix

	Old Markets	New Markets
Old Products	Chickens	Beans
	Beans	Tomatoes
	Groundnuts	Potatoes
	Pigs	Pepper (pilipili mbuzi)
	Goats	
	Tomatoes	
	Green and red pepper	
New Products	Improved pigs	Garlic
	New varieties of	Zucchini
	Pigeon peas	Pyrethrum
	Soybeans	

is building social capital and strengthening the organizational capacity of rural communities or farmers groups to better manage their resources and community assets.

Participatory diagnosis: building on community assets and opportunities rather than problems and constraints

Most FPR and rural development projects routinely start with a participatory rural appraisal (PRA) exercise to identify problems and constraints in the farming system, and as an entry point into communities. Recently, PRA has come under criticism for being superficial, extractive, transitory, unable to initiate change and build local capacities (Ashby, 2003; Cook and Kothari, 2001), and lack adequate follow up. ERI advocates for and uses a different approach for participatory diagnostic.. An important principle of this approach is that it starts with an analysis of strengths and opportunities, rather than problems and constraints, and build on these opportunities to develop community action plans. The main thrust of ERI is that rural communities are endowed with resources and assets that establish their capabilities and can be turned into opportunities for improving their livelihoods. Drawing form the principles and concepts of sustainable livelihood approaches (Carney 1998), participatory diagnosis aims at facilitating a collective vision of desired future conditions and defining strategies for achieving better livelihood outcomes, and r empowering rural people to become able agents of their own change. The PD is based on the SARAR technique (Rietbergen-McCracken and Narayan 1998) which stands for the following five attributes:

1) Self-esteem: a sense of self-worth as a person as well as valuable resource for development
2) Associative strength: the capacity to define and work toward a common vision through mutual respect, trust and collaborative effort
3) Resourcefulness: the capacity to visualize new solutions to problems, and the willingness to take risks
4) Action planning: combining critical thinking and creativity to come up with new, effective and reality-based plans in which each participant has a useful and fulfilling role
5) Responsibility: for follow through until the commitments made are fully discharged and the vision of benefits achieved.

SAAR has the advantage of facilitating an internal drive for change, starting with people who are open minded and who believe in the success of change effort, and who can bring different perspectives and strategies for achieving the livelihood outcomes. Visioning helps farmers and rural communities to realize the potential for change, and the need to be cognizant and understand the forces that can facilitate or constrain change, and define workable strategies for seizing opportunities and dealing with potential challenges. All the pilot communities have developed action plans with explicit objectives, activities, roles and responsibilities of different stakeholders and partners, but are in different phases of operationalization of their action plans. To facilitate the implementation of community action plans, farmers usually form small groups or committees to

coordinate and monitor activities, as well as, mobilize other farmers to participate. There are many arguments for working with groups rather than individual farmers. These arguments build on the functions and impacts that groups can play in R&D, in terms of enhanced efficiency, relevance, effectiveness and equity of research, as well as building social and human capital and improve the adoption and adaptation of agricultural technologies and innovations (Ashby & Sperling, 1994; Hagmann *et al.*, 1999; Heinrich, 1993; Bebbington et al. 1994; Sanginga et al., 2001; Ashby et al., 2001)

Identifying market opportunities and selecting community agroenterprises

Most of experiences on linking farmers to markets have used a commodity chain approach. The decisions on what products and enterprises to develop, what markets to target are often prescribed by government agencies, private companies or development organizations, and then work down the market chain to organize production to meet identified market demands. Rather than prescribing markets and products to market, the ERI process is based on a territorial approach as opposed to a commodity approach for identifying market opportunities and building profitable agroenterprises for small-scale farmers.

The ERI approach expands the conventional production to consumption or commodity chain approaches by explicitly basing decisions on what products and markets to target on the combination of community assets that will best meet the dual needs of household food production and income generation. In this approach rural communities become active partners in processes of market opportunity identification, rural agroenterprise development and co-innovation, predisposes fundamental changes in the behaviour, roles and functions of formal agricultural R&D service providers. The purpose of a territorial approach to agroenterprise development is the creation of capacity at the local microregional (district, watershed or community) to identify and develop opportunities for diversifying or adding value to the production of small-scale rural producers. The process of agroenterprise development has three stages usually undertaken in a sequential manner. Within each stage, there are a series of methodological steps that need to be accomplished.

The Market opportunity identification (MOI) stage aims to match market demand with the biophysical potential of the region to produce or supply certain commodities or products of agricultural, livestock, fisheries or forest origin, and the interest of farmers and other rural producers to engage in their production. This stage ends with the identification of a basket of options that have an identified market demand, b) can be produced in the region, and c) are of interest to the farmers and other producers. Each of the options then enters the stage of integrated agroenterprise project design which has three main steps: 1) the analysis of the supply chain to identify and characterize the relations among the different actors, 2) the identification of critical points affecting the competitiveness and sustainability of, and the equitable distribution of benefits along the supply chain, and 3) the development of an action plan to correct the deficiencies detected. The action plan will include enterprise development and research oriented activities. This stage ends with a portfolio of integrated agroenterprise or supply chain projects that seek to link farmers to growth markets in an equitable, competitive and sustainable manner. The development of the agroenterprises that are the subject of these projects will demand the delivery of efficient and effective support services, which include the need for market intelligence, technical information on production, handling and processing of the products selected, technical and enterprise training, technical assistance, transport, research support, and savings and credit. The third and final stage therefore involves the design of a local business support system. The Agroenterprise Committee forms part of this system, and has the function of articulating the supply of and demand for services. To do this requires the characterization of the existing formal and non-formal services present in the region with the aim of detecting gaps and deficiencies. An action plan is developed to promote the delivery of demand-driven business services that are provided in a sustainable and effective fashion.

The agroenterprise development process is a dynamic one, and should not only be used to strengthen existing agroenterprises. The market opportunity identification stage will generate options that may not be immediately viable because of the lack of reliable technical and economic information on which to base a feasibility study. This lack of information then becomes the basis on which to develop a research agenda for local, regional and national governmental and non-governmental institutions.

The fist phase has been accomplished in all the pilot learning sites, while the second phase is underway in some of the first generation sites. The third phase has not yet started. A first step was to conduct participatory market research (PMR), a process in which a group of farmers who represent their communities, collect information on existing crops and products, or new ones that they have identified through PD as having market potential (Best, 2002). The market committee is usually comprised of 5-10 men and women, selected based on community criteria, for example, representation of men and women, level of commitment, communication skills, literacy levels, etc. The income committee is facilitated, trained and mentored by experienced community development and market facilitators to undertake.

The visits to major markets, supermarkets, hotels and restaurants, wholesale and retail markets, and food and agro-processing companies in nearby towns and cities, and some time capital cities, wile the facilitators collect additional information and make contacts with distant markets. The group collects information on crop varieties and types of product, their quality characteristics, the preferred presentation (size, weight etc.), packaging, price, frequency and volume of delivery, terms of payment, etc. Facilitating

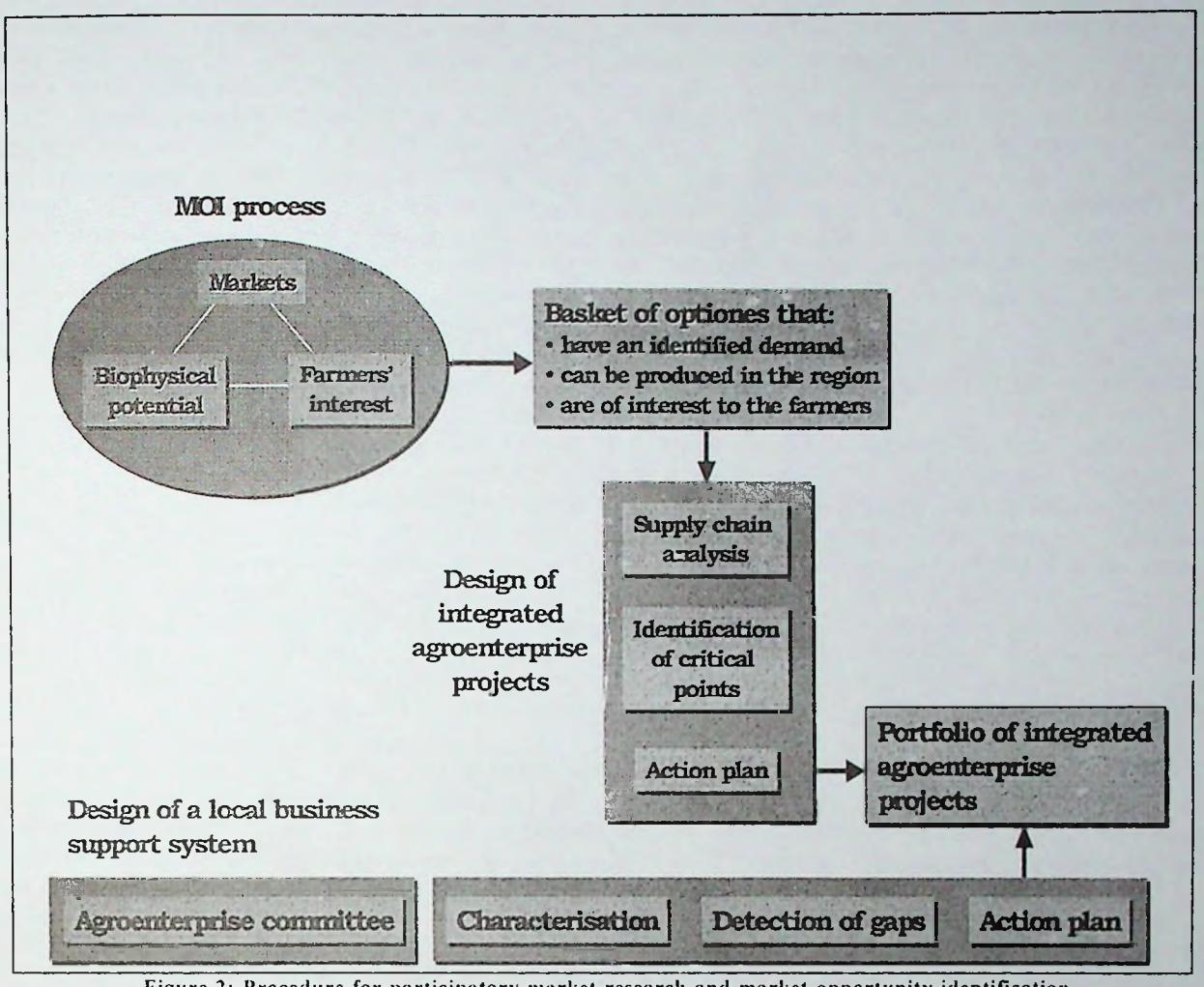


Figure 2: Procedure for participatory market research and market opportunity identification

"look and learn visits" to other farmers who are successful in producing and selling the selected products, is essential for farmers to collect additional information they need for the evaluation of different options, and to broaden farmers' choice. After the market visits, farmers are facilitated to conduct a participatory cost benefit and risk analysis (PCBRA), and participatory market chain analysis (Bennet et al., 2004) to select promising enterprise options suitable for the community.

Table 3 summarizes the different enterprises options selected in the different pilot learning sites. Farmers tend to select existing crops (beans, groundnuts, potatoes) and small livestock (goats, pigs, poultry and rabbits) for which they have good knowledge of production, for both old and new markets. However, increasingly, farmers are beginning to select relatively new enterprises for new and old markets as well. For example, in Lushoto, Tanzania farmers selected zucchini, a new crop in their communities for selected markets in the capital city; while the groups in Kabale decided to develop an enterprise around pyrethrum (*Chrysanthemum cinerariaefolium*), a crop used for producing natural insecticides by a private processing firm in Kabale. Other groups in Kabale, Uganda found a niche markets for specific varieties of their existing crops (e.g. potatoes for chips)

Results of enterprise selection revealed that farmers use a range of criteria for selecting enterprise options. It is interesting to note that contrary to a purely economic and marketing perspective, majority of farmers did not always select enterprise options which offered higher rates of returns and high profitability (Table 4). Rather, they used a range of economic, agronomic and non-economic criteria for deciding on enterprise options to develop. Criteria such as the existence of reliable market demand, the relative ease of production, the profitability of the selected option, the benefits that each option could bring to different groups in the community, and interest in testing new crops and new products. Rather than selecting enterprise options with higher returns, farmers preferred those that bring small amount of money regularly and over a short period. For example, in Kabale, while potatoes offered the highest rate of returns compared to other options, farmers selected pyrethrum, a new crop in the area that does not require higher investments in inputs, and provides small but regular

Table 4: Types of experiments for the selected enterprises

Enterprise Options	Issues for experimentation	Sites/Countries
Pigs	Dual purpose legumes (Intercropping pigeon peas and soybeans with maize; crop rotation soybean and maize, pigeon peas and maize) for supplement feedings	Ukwe, Malawi
	Participatory varietal selection of pigeon peas and soybean	
	Farmer field school on different feeding regimes, health and management practices	
Potatoes	Small plot seed production	Ukwe, Malawi
	Integrated pest and diseases management	Kabale, Uganda
	Participatory varietal evaluation	
	Integrated soil fertility management	
Beans	Integrated soil fertility management	Hai, Tanzania
	Integrated pest and diseases management	Lushoto, Tanzania
	Participatory varietal selection	Dedza, Malawi
	Seed multiplication, seed systems	Tororo, Uganda
	Intercropping	Ukwe, Malawi
Groundnuts	Participatory varietal evaluation	Tororo, Uganda
Pyrethrum	Integrated soil fertility management	Kabale Uganda
	Soil and water conservation	
Goats	Evaluation and selection of multipurpose legume trees and forages ((Napier Gold Cost, *Panicum maximum* 'Ntchisi', Rhodes composite, *Leucaena diversifolia* and *Gliricidia sepium*.	Kabale, Uganda Dedza, Malawi Ukwe Malawi
Tomatoes, onions, garlic, zucchini	Integrated soil fertility management	Hai, Tanzania
	Integrated pest and diseases management	Lushoto, Tanzania
	Variety evaluation	Bulindi, Uganda

monthly income to farmers. In addition, pyrethrum is a high altitude crop (1800 m.a.s.l.) and could therefore be grown on abandoned land. Another important factor in favour of pyrethrum was the opportunity that it offered for "bringing men back into agriculture". Similarly, in Hai, Tanzania, farmers preferred beans to tomatoes although the latter had a much higher cost-benefit ratio. In Tororo, Uganda, although pigs provided high rates of returns compared to beans and groundnuts, the later were eventually selected for the markets. We also found that while male farmers were generally attracted by options that provided higher profitability, women preferred dual purposes crops for food consumption and income generation.

Another important observation across sites is the selection of small livestock as enterprise options. Increasingly, poorer communities (Malawi) and women generally tend to select small livestock in addition to crops, not only because of their economic returns, but also more for asset building and risk aversion. In addition to their potential role for income generation and food security, livestock are important for asset building for the poor and women, providing them with social status and a way to accumulate assets more easily. . It has been observed that when poor people have access to cash, they usually tend to invest in livestock which gain value through reproduction (IFPRI, 2002)

The next phase of developing integrated agroenterprise projects requires a more detailed analysis of market chains Participatory market chain analysis (PMCA) approaches are used to clearly map market requirements in terms of volumes and quality, frequency of sales, prices and payment terms. The use of participatory techniques to undertake market chain analysis is important to establish a long term vision of enterprises, ensure ownership of the process, and design a set of activities and actions required by the farmers and service providers. PMCA also includes modifications needed in the production, postharvest, transportation and marketing of the products, and identify critical points requiring concerted efforts.

Farmer experimentation and participatory technology development

Once farmers and communities have identified and selected an enterprise option, an agronomic evaluation matrix is conducted to identify constraints in production, and identify opportunities for increasing the productivity and competitiveness of the selected enterprises. This agronomic characterization matrix has the advantage of stimulating farmers' experimentation process to test alternative production strategies and opportunities for improving productivity and competitiveness of different enterprise options. It was evident that farmers needed to gain new knowledge and skills that would allow them to sustain more intensive, market-oriented production, and overcome

constraints to profitable enterprises. This phase is also seen as necessary to reduce risks of new enterprises, and to maintain the balance between food security and market orientation. Farmer experimentation provides farmers with opportunities for trying out a range of options, to adapt them to their situations and circumstances rather than adopting a fixed package.

The FPR process follows the learning selection mode (Douthwaite et al., 2003) that recognizes four distinct phases in the innovation process. These are: (i) innovation development phase, where the farmer research group develops best bet integrated solutions; (ii) start-up phase, in which the farmer research group and experimenting farmers take the best bet options and integrate them into their production systems; (iii) adaptation phase, where the farmer research group and the experimenting farmers and R&D agents work together to co-evolve the promising options; and (iv) expansion phase, where adoption levels expand as farmers in the wider community begin to integrate and adopt the promising options into their systems.

Table 5shows the types of experiments being conducted in the different sites to improve the productivity and profitability of selected crop and livestock enterprises. These include crop variety evaluation; integrated soil fertility management, integrated pest and diseases management, agronomic practices; livestock feed and forages, and soil and water conservation. Across sites, a key constraint to crop productivity and to increasing profitability was declining soil fertility. Market-oriented production system is likely to lead to more intensive production and could place further pressure on an already fragile resource base (for example, by increasing soil fertility depletion and soil erosion, increasing diseases and pests, etc.) which can eventually limit the potential for household to sustain production, and may lead for further degradation of natural resource base. Failure to replenish and recapitalize soil fertility leads to unsustainable agricultural outputs and incomes.

Integrated soil fertility management experiments conducted by farmers' groups in support of their enterprise options include:

1 Management options better suited to different soil conditions (poor soils, acid soils, clay soils) different locations within the landscape
2 Appropriate use of organic/inorganic materials for soil fertility improvement
3 Management options aiming at optimal use of legumes in combination with strategic applications of organic and inorganic fertilizers to maximize nutrient cycling and soil organic matter replenishment
4 Appropriate niches for legume for soil fertility improvement and erosion control
5 Testing and evaluation of dual purpose grain legumes (soybean, pigeon peas, ad green manure

Farmer experiments can be as simple as comparing different varieties or as complex as experimenting on interactions between crop varieties, soil fertility, and pest and disease management. These experiments are conducted on group or community learning plots with the farmer research group, or on individual plots of selected farmers, who have the responsibility of monitoring the experiments, mobilizing resources and providing feedback to the community. With crop variety evaluation, farmers tend to prefer combining relatively bigger plots for seed multiplication of improved market varieties, while maintaining small plots for testing and evaluating different varieties and management practices. A general observation across sites reveals that farmers tend to be keen to experiment for at least two seasons under different soil conditions. They also tend to select more than one technology option given different circumstances. For example, after experimenting with different soil fertility management of pyrethrum, male farmers preferred application of marc compost while women preferred farmyard manure. Some other farmers preferred inorganic fertilizers for potatoes production to get the right size required by the buyer. Participatory evaluation of experiments have revealed the different criteria that farmers use in selecting varieties and management practices, as well as constraints in the adoption and management of certain technologies.

Does market orientation benefit women and the poor?

Empirical studies on intra-household gender dynamics elsewhere in Africa have shown that when a crop enters the market economy, men are likely to take over from women, and that women therefore do not benefit from market-oriented production (Quisumbing et al., 1998; Kaaria and Ashby, 2001; Cornwall, 2003). It is argued that market oriented production is likely to result in increased income controlled by men, while forcing women to turn their labour from production of food security crops for household consumption. There is also a risk that market oriented production may result in the capture of the benefits by the rich, to the detriment of the poor or creating a privileged group of farmers with access to a new technology. On the other hand, empirical studies (Quisumbig 2004; Cornwall, 2003) have shown that increasing resources and income in women's hands lead to significant gains in agricultural productivity, nutritional status and household welfare. When promoting market-oriented production, there is need for a better understanding of intra-household and community dynamics to assess the differential and distributional effects of market oriented production on different categories of farmers. Rather than focusing only on women as is the case in many "gender" strategies, our strategy has been to encourage and sustain active participation, and cooperation of both men and women in the project activities, and creating gender awareness at the community level through the use of interactive adult education methods.

By using a number of gender-sensitive participatory tools and constantly focusing attention on three main sets of questions: (1) who has access to and control over resources, (2) who does what, when and where, and (3) who benefits from what and how, ERI seeks to bring to the forefront implicit assumptions about the different needs, opportunities

Table 5: Prospects for scaling up with existing and new partners

Partners	Prospects for scaling up	Specific activities
NARO	National agricultural research organization-nationwide Institutionalizing ERI approach in the "new NARS"	• Capacity building on 26 NARO scientists on ARI approaches; Action Plans development and follow up with 22 Scientists from the Agricultural Research and Development Centres (ARDCs) • Pilot learning sites in two of the ARDC • Joint proposal development • Participation in NARO strategy development • Backstopping theme 2 on innovation and marketing • Top management support
Africare	Working directly with 140 groups in 5 Districts of southwestern Uganda	Pilot learning sites Capacity building
Africa 2000 Network	Working directly in 11 Districts with over 183 groups. Facilitating a network of Farmers Field School and convener of INSPRIRE, a consortium of research, development and extension services for promotion of soil fertility innovations	Pilot learning sites Participation in INSPIRE Backstopping support Joint project development
DALDO	Providing extension services to more than 345 farmers' groups, organized in MUVIMAHA, a second order association. Piloting nation-wide programme on Participatory Agricultural Development and Empowerment Project (PADEP) and Agricultural Marketing Development System	Pilot learning sites
DARS	National agricultural research institute	Pilot learning sites Support to the socio-economic unit and farming system unit Training of 6 scientists To-Management support
TIP	Working directly with more than 500 water user groups in 5 districts in northern Tanziania	Pilot learning sites
Potential for scaling up wit New partners		
AfNET	Pan African Network of 22 African countries, with membership of over 300 scientists. Has recently developed a thrust on market led-ISFM	Training workshop of 34 scientists from 12 countries on ERI approaches. Keynote paper on AfNet Symposium Joint proposal development.
CEED	Coalition of key NGOs in Kabale	Capacity building
NAADS		Training and backstopping Exploratory studies on market opportunities identification
AHI		
ECABREN/SABREN		
ATDT, Rwanda		
Mozambique		
Kenya,	Five regional KARI centres	
Volta Basin	Ghana and Burkina Fasso	
PELUM		Joint proposal development

and constraints that the different categories of farmers may face as well as designing strategies for the removal of any practical constraints to their participation. This strategy at the community-level seeks to eradicate gender discrimination, and promote gender equity in key areas such as participation in groups and committees, leadership positions, decision-making, asset ownership, gender differentiated enterprise options and food consumption crops. Gender awareness training at the community level also includes HIV/AIDS as these are closely related to gender issues and community dynamics.

One specific strategy for promoting gender equity and the participation of women and the poor is the use of farmer research and market groups. Sanginga et al. (2002) observed that FRG was an effective mechanisms for reaching women and the poor, while maximizing interactions between men and women, and between the poor and non-poor. It has also been observed that overall there are increasingly more

women actively participating in community meeting and ERI activities as compared to the time of project initiation. Increasingly more women are gaining confidence and actively participating in group and community decision-making where initially they would otherwise avoid speaking: *"We women participate in the work just as the men do. Although I was a little shy at first, I am now supremely confident in my ability to accurately document the work of our group."*

An important consideration in selecting enterprise options has been the potential number of farmers that may be involved and the extent to which the enterprise may not adversely affect women and the poor. In Tororo, Uganda, women objected to the selection of pigs as an enterprise on the basis that "pork meat spoils men" because of its association with bars and alcoholic drinks. Women also perceived pigs as being destructive, difficult to keep, and requiring a lot of feed and food. Pigs were therefore likely to increase women's labour and competition with household food needs. In a contrasting case in Kabale, Uganda one of the reasons for selecting pyrethrum was to "bring men back into agriculture":

Pyrethrum growing is an engaging activity, the crop matures fast, it needs regular weeding, flowers must be picked every week, dried and taken to the collection centre. This requires commitment.. Our husbands use a lot of their time drinking. If we have pyrethrum in the farm, they will have work to do and spend less time drinking..."

In general, it has been observed that while men tend to select high value crops and enterprises for sale only, women are more concerned with enterprises (small livestock and crops) that have a good market, but can also be used for household consumption, giving them high control of potential income. Providing at least two options to farmers according to the different needs of men and women is strategic to promote gender equity.

Strengthening Social Capital and empowering rural communities

Recent research has shown the importance of reinforcement and continued deployment of social capital in a society for successful interventions and community development (Grootaert, 2001). Social capital encompasses the nature and strength of existing relationships between members, the ability of members to organize themselves for mutual beneficial collective action around areas of common need and managing the social structures required to implement such plans (Uphoff and Mijayaratna, 2000) and benefit from more effective paths to sustainable development (Woolock and Narayan, 2000). Pretty (2003), Uphoff and Mijayaratna (2000), Grootaert (2001) and many others have shown that social capital lowers the transaction costs of working together and facilitates cooperation, relations of trust, reciprocity and exchange, common rules, norms and sanctions, and connectedness in networks and groups. ERI seeks to strengthen three types of social capital: bonding, bridging and linking, have been identified as important for the networks within, between and beyond communities. Bonding social capital describes the links between people with similar objectives and is manifested in local groups. Bridging social capital describes the capacity of groups to make links with other groups that may have similar objectives, and linking social capital describes the ability of groups to engage with external agencies, either to draw on useful resources or to influence policies (Pretty, 2003).

Each community or farmer group is facilitated by a community development facilitator who, among others, is charged with the responsibilities of facilitating and supporting group development processes to reach the maturity and performance stages. This is achieved initially through supporting facilitation of meetings and group dynamics, training and supporting leadership skills, record keeping, and training in other areas of group development as well as providing specific technical support and linking groups with service providers. In Dedza, Malawi, a site initially characterized by low social capital (David 2004), farmers reported that the levels of trust and cooperation have dramatically increased with the presence of the different committees, regular meetings in the community, and regular interaction with research and development partners. In Kabale, Uganda farmers have initiated collective action for erosion control, organizing community agroforestery nurseries, and establishing policy taskforces and byelaw committees in support of their soil conservation and watershed management activities, and link up with high-level policy institutions. These groups have attracted additional resources from the National Agricultural Advisory Services (NAADS) and other NGOs such as CARE. Similarly, in Tororo, group members have organized rotating exchange labour, mobilizing financial resources, and are increasingly linking with other external development organizations to support their activities. In Hai, Tanzania, the initial group has established ties with other three farmers groups and they are actively working together on marketing and experimentation. Across sites, the groups are catalyzing horizontal and vertical linkages with other farmers organizations, service providers, and government departments. These groups are increasingly becoming a vehicle through which farmers are pursuing wider concerns, initiating new activities, organizing collective action among members and extending relations and linkages with external organizations.

While progress has been made in strengthened social capital in most communities, there has been some downside of social capital (Moluneux, 2002; Cornwall, 2003). Some levels of conflicts, divisions and exclusion, and overcommitments have been observed in some pilot sites. These include conflicts between the pre-existing water user group comprising of over 200 farmers and the emerging enterprise group of some 27 farmers who organized themselves around production and marketing of zucchini, to the exclusion of other farmers in Lushoto, Tanzania. As a consequence conflicts between the larger water user group, and the smaller newly formed market group have hampered

collective action for maintaining traditional irrigation canals. In Tororo, Uganda, as result of their success, the group has become overcommitted by several development partners and visitors, often working without coordination and integration. A key challenge in Malawi is overcoming the dependency syndrome and paternalism in communities which had earlier become accustomed to receiving relief, starter packs, and other forms of handouts, from government and NGOs. The initial sites in Malawi were selected in part to represent this situation of extreme poverty, and a project challenge is to find a way of breaking the poverty cycle there.

Participatory Monitoring and evaluation and Scaling Up strategies

Because of the risks involved in marketing and agroenterprise development, it is critical to integrate an effective participatory monitoring and evaluation (PM&E) system, to build in regular learning and reflection loops with communities and partners to ensure that lessons are documented, adjustments are made in a timely manner, providing critical feedback that form the basis for scaling up the process into agricultural research and development organizations. ERI's PM&E system combines three different levels which are complementary and feed into one another: community-based, institutional and regional. These PM&E are more results oriented and focus on outcomes, outputs as well as processes. The objectives of community-based PM&E is to strengthen the collective capacity of rural communities to define their desired outcomes, and their indicators of change, tracking changes and making necessary adjustments, sharing and learning together as they develop their agroenterprises and experiment with improved technologies, and collaborating with service providers in support of their productive and market activities. PM&E is important as it provides the opportunity to evaluate what works, how and why, both for impact assessment and for institutional learning and change, and eventually for scaling out and up.

One of the challenges of participatory research is, however, how to use what has been learned in localized environments to generate lessons of wider applicability and scaling up and out (Ashby, 2003).

Scaling Up potential with existing and new partners

Based on a summary of recent studies on scaling up Gundel et al. (2001) highlights some essential elements for scaling up. These include strengthening institutions, building capacity, developing a participatory monitoring and evaluation (PM&E) system, and engaging in policy dialogue. Over the last three years, we have conducted over 10 workshops, reaching more than 200 R&D partners to enhance their skills to implement an ERI process effectively. Some of our R&D partners in the three countries are increasingly recognized as having expertise in linking farmers to markets and rural agroenterprise development, and government organizations, other NGOs and private sector are actively seeking their services and support. Some partners have initiated the process of institutionalizing ERI approach within their organizations and expanding its application to new areas beyond the pilot sites. One of the development partners in Tanzania, the traditional Irrigation programme (TIP), has mainstreamed ERI in its "package", and has developed their own Swahili training manual based on ERI approach. TIP is also expanding the ERI approach to over 20 new communities in two new districts (Arumeru and Mwanga). The National Agricultural Research Organization (NARO) in Uganda has embraced various components of ERI as a methodology for conducting integrated agricultural research for development (IAR4D) in its six agricultural research and development centers (ARDC), and in the ongoing reorganization of research programmes.

There has been considerable expansion in the interest and demand of ERI approach by several research and development organizations. Creating a critical mass of scientists and development partners is crucial for scaling up the ERI process. Among the possible mechanisms for institutionalizing ERI approach is the "Learning Alliance". The Learning Alliance is a process of mutual learning between research and development institutions that seeks to enhance the rate of uptake of innovative concepts, methods and technologies among R&D service providers and their clients. The model is based on a) the identification of a specific development need or demand, and b) the definition, and subsequent implementation, of a set of activities over time that involves cycles of learning, putting into practice what has been learnt, followed by reflection and feedback on what has worked and what has not worked. This approach differs substantially from the common practice of attempting to 'train' agricultural research and development practitioners in new methods and tools in one-off training courses of short duration.

There are opportunities to pursue a learning-alliance type of partnership with strategic institutions such as the Participatory Ecological Land Use Management (PELUM), a consortium of over 150 NGOs in eastern and southern Africa, the African soil fertility network (AfNet), a network operating in over 25 countries in sub-Saharan Africa, and the Desert Margin Programme operating in the Volta Basin. There are also opportunities for ERI to be tested in the pilot learning teams of the CGIAR Sub-Saharan Challenge programme (FARA, 2003) that has the essential components of ERI approach.

Discussion and Lessons Learned

A number of lessons can be drawn from this action research on integrating FPR and PMR for enabling rural innovation in Africa. First, rather than prescribing market opportunities and products to market, ERI uses community-based participatory approaches to build the capacity of rural communities to identify market opportunities and develop profitable agroenterprises for poor farmers in marginal areas, taking gender and equity considerations as an important

thrust. In this context, participatory diagnosis concentrate on identifying opportunities and community assets, and developing community visions of desired future conditions, rather than problems and constraints, as is the case in conventional PRAs. Working through farmers groups and strengthening both bonding, bridging and social capital is critical for effectiveness, equity, relevance and ownership of research and development process in rural communities. By strengthening social capital, ERI encompasses proactive strategies for ensuring gender equity and empowering women to access market opportunities and ensure equity in the distribution of benefits.

Second, due to the diversity of activities involved in ERI, the success of this work is highly dependent on the development of effective quality partnerships with research and extensions systems, NGOs and farmer communities. Lessons learned suggest that it is important to build necessary amount of human capital and social capital to create institutional commitments and clarity in understanding of the roles, responsibilities and expectations of the different partners. It is also critical to develop early in the project a simple and functional participatory monitoring and evaluation system, to build in regular reflection activities with communities and partners, to ensure that lessons are documented, and to enable adjustments to the project to be made in a timely manner. However, considerable efforts are still needed to forge effective partnerships with the private sector and high-level policy and government institutions and initiatives on marketing. These are key for sustainability of rural agro-enterprises and for scaling up, linking community-micro initiatives to high-level macro economic policies.

Third, It is interesting to note that farmers did not always select enterprise options which offered higher rates of returns and high profitability, as expected. Rather, they used a range of economic, agronomic and non-economic criteria for deciding on options to develop. In general, it has been observed that while men tend to select high value crops and enterprises for sale only, women are more concerned with enterprises (small livestock and crops) that have a good market, but can also be used for household consumption, giving them high control of potential income. Providing at least two options to farmers according to the different needs of men and women is strategic to promote gender equity. Because of the risks involved in marketing and agroenterprise development, farmer experimentation helps to reduce such risks and build local capacity to solve problems, by combining scientific expertise with local knowledge. Farmers' experimentation provides a significant opportunity for balancing market orientation and profitability with enhancing productivity of household food consumption needs.

Fourth, there are some important challenges of linking farmers to markets. These are related to improving market institutions and market behaviour for small-scale farmers. Market institutions are indeed critical to the expansion of production possibilities and to improve the performance of small-scale agriculture (Gabre-Madhin, 2004). One key challenge in the case of pyrethrum and potatoes in Uganda, and Zucchini in Tanzania has been market failure. Due to cash flow problems, the pyrethrum processing company was unable to pay farmers for several months. Unfortunately, there are no other buyers of pyrethrum in Uganda, a crop that does not have any other local use. Although there was a potential to sell pyrethrum across the border in Rwanda, lack of timely market information, especially for distant markets, has impacted on the ability of farmers groups to take advantage of better market opportunities. This lack of market information and communication has also affected farmers in Kabale who could not deliver potatoes to their buyers, and the later was forced to purchase potatoes in the open markets (Kaganza et al., 2004). There are now increasing potential of using mobile phones for accessing market information, however, there are still important challenges in making market information work for small-scale farmers. It has become evident that smallscale farmers needed a working capital to make the enterprise viable and more profitable. Many profitable enterprise options were discarded because of lack of initial investment capital to start the enterprise. To make small-scale farming more profitable would require developing sustainable funding mechanisms for enterprise development and market institutional innovations for providing credit to farmers. Rural micro-finance, which includes both credits and savings, is important for rural agro enterprise development. Some pilot communities such in Uganda (Tororo) and Tanzania (Uganda) have started small initiatives that promote group-based savings and credit. For example, farmers' groups in Tororo, Uganda have opened a bank account for savings and creditor financing their enterprises and, enabling investments in more profitable enterprises. But these types of micro-finance need markets that help to make credit and savings more effective. What is needed now is increased market development and promoting efficient market institutional innovations that provide more effective market information systems, help farmers develop and enforce contractual arrangements, increase market power, manage prices and market risks, facilitate access to credit and other financial and business services, develop inputs markets and extension advice for accessing new technologies and information. This is a role that government, the private sector and other rural service providers will need to play.

Fifth, achieving success in ERI requires that a scaling-up strategy be explicitly mapped out from the initial selection of partners and communities, to sharing lessons with other partners and organizations, and to ultimately widen development impact. The potential for scaling up, that is reaching more people and communities more quickly with quality benefits over a wider geographic area (IIRR, 2002) is an important criterion for selecting partners and pilot communities. There are encouraging signals as some development and research partners have initiated the process of institutionalization of ERI, while interests and

demands from new partners who have considerable potential for scaling up is increasing. Opportunities for forging learning alliances with existing and new partners need to be fully explored.

Finaly, developing sustainable rural agro-enterprise is relatively a long and intensive process that requires effective facilitation and entrepreneurship skills and market institutional innovations. The ERI process has been more effective at the community level. Although individual case studies show promising signs of success and robust results, the greater challenge lies on linking micro-level community processes to higher meso and macro-levels where market opportunities and institutional conditions may offer much greater opportunities for small-scale farmers. The challenge for research and development is on creating conditions under which national policies and market initiatives can support and benefit small-scale farmers in marginal conditions.

Conclusion

The need to increase food production in a manner that also increases the incomes of small-scale farmers, whilst maintaining the natural resource base is widely recognized as an effective strategy for achieving sustainable rural livelihoods in sub-Saharan Africa. However, until recently, linking processes of technology generation with those of income generation and agro-enterprise development is generally left to organizations that focus on either of the two. Agricultural research organizations have largely focused on increasing the productivity of food crops in small scale farming system, but have neglected linking farmers to markets to diversify and increase their incomes. On the other hand, initiatives to link farmers to markets have been spearheaded by government agencies, private sector and to some extent non-governmental organizations. However, these have tended to focus on export crops using top down approaches. Few look at building farmers' capacity to identify and develop enterprise opportunities, to match market opportunities with investment in improving the resource base, and build local capacity to solve problems, generate and access technologies through farmer participatory research.

This paper outlined an integrated approach to demand driven and market orientated agricultural research and development. The approach termed Enabling Rural Innovation "ERI" expands farmer participatory research by explicitly basing decisions on what crops and livestock enterprises to do experimentation on identifying profitable market opportunities. It also expands rural agroenterprise development by identifying and resolving constraints to food production through farmer experimentation to intensify production and better manage the resource base, in particular the natural resource base, on which the productive activities depend. By strengthening social capital, ERI encompasses effective and proactive strategies for promoting gender and equity in the access to technologies and market opportunities, and in the distribution of benefits and additional incomes to different categories of farmers.

Sayer & Campbell (2001) concluded that sustained improvements to the livelihoods of poor tropical farmers require a different type of research, aimed at enhancing the capacity of the rural people to adapt to changing conditions, rather than at delivering 'finished' technologies. We argue that ERI illustrates several of the broad principles of an integral rural development approach (de Janvry and Soudoulet 2003), and therefore provides a framework for applying the new paradigm of international agricultural research *for* development (IAR4D) adopted by the Forum for Agricultural Research in Africa (FARA 2003). ERI contributes to addressing these challenge and aims at strengthening and sustaining capabilities within rural communities to make the rural poor agents of their own change; and improve the effectiveness of local organizations or social capital of the poor to identify and develop profitable agroenterprises to increase the incomes and build the agricultural and other assets of the poor, especially women.

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