

Facilitating pro-poor market chain innovation:
An assessment of the participatory market chain approach in Uganda

Douglas Horton



Papa Andina | www.cipotato.org/papandina

Papa Andina is a regional initiative that works with organizations of research and development of the potato sector in Bolivia, Ecuador and Peru using the market chain approach as a powerful framework to bring together research organizations and a wider range of partners to promote pro-poor innovations. Its main purpose is to link research to development to improve the food security and to contribute to the reduction of poverty. In Bolivia it works with the PROINPA Foundation, in Ecuador with INIAP and in Peru, its strategic partner is the project INCOPA.

Papa Andina is coordinated by the International Potato Center (CIP) with financial resources and strategic support of the Swiss Agency for Development and Cooperation (SDC). Other resources come from New Zealand's International Aid and Development Agency (NZAid) as well as from UK Department for International Development (DFID), who specially contributed to the project PMCA-Uganda, documented in this working paper.

PRAPACE | www.prapace.org

PRAPACE is the French acronym for Regional Potato and Sweetpotato Improvement Network in Eastern and Central Africa. It developed out of PRAPAC, a network established in 1982 by the International Potato Center (CIP), national research institutes of Burundi, Rwanda and DR Congo to link their potato programmes.

Currently PRAPACE, based in Kampala, Uganda, collaborates with potato and sweetpotato programs of ten ASARECA (Association for Strengthening Agricultural Research in Eastern and Central Africa) member countries in the region. These countries are: Burundi, DR Congo, Eritrea, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, Tanzania and Uganda. The purpose of PRAPACE is enhanced productivity, value added and competitiveness of the regional potato and sweetpotato systems

The network is under the auspices of ASARECA and is affiliated with CIP, which provides backstopping for the flow of improved germplasm, scientific information, training, and administrative support. The United State Agency for International Development-East Africa (USAID-EA) and research institutes of the ten member countries are the major donors. Other donors included UK Department for International Development (DFID) and International Development Research Center (IDRC).

Working Paper

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Table of Contents

Acronyms	iv
Summary	viii
Introduction	1
Study objectives and methods	4
Background on the participatory market chain approach.....	5
Origin and development of the approach.....	5
Main Features of the approach.....	7
Timeline for introduction the PMCA	10
Key actors, roles, and motivations	15
R&D Organizations	15
Market chain actors.....	18
Motivations for involvement	18
Assessment of the strategies employed to introduce the PMCA.....	20
Strategies employed	20
Challenges and improved strategies	23
Innovation histories	25
Potato group	25
Sweetpotato group.....	26
Vegetable group.....	28
Factors that have stimulated innovation	30
Results to date.....	32
Commercial, technological, and institutional innovations	32
Development of capacity to innovate	36
Growing interest in the PMCA	40
Prospects for the future.....	42
Prospects for future use of the PMCA in Uganda.....	42
Prospects for use of the PMCA with other commodities	43
Prospects for future use of the PMCA in other countries	44
References	45

ACRONYMS

A2N	Africa 2000 Network (headquartered in Kampala, Uganda)
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
CICS	Competitiveness and Investment Climate Strategy, the Secretariat for which is based in Uganda's Ministry of Finance, Planning and Economic Development
CIP	International Potato Center (Centro Internacional de la Papa)
DANIDA	Danish International Development Agency
DFID	Department for International Development, United Kingdom
FAUEX	Federation of Associations of Ugandan Exporters
INCOPA	Project for Potato Innovation and Competitiveness in Peru (Proyecto de Innovación Tecnológica y Competitividad de la Papa)
NAADS	National Agricultural Advisory Services, Uganda
NARO	National Agricultural Research Organization, Uganda
NGO	Non-Governmental Organization
OFSP	Orange-fleshed Sweetpotato
PMCA	Participatory Market Chain Approach
PRAPACE	Regional Potato and Sweetpotato Improvement Network in Eastern and Central Africa
R&D	Research and development
RAAKS	Rapid Appraisal of Agricultural Knowledge Systems
RIUP	Research Into Use Programme (a program of DFID managed by Natural Resources International Ltd.)
SDC	Swiss Agency for Development and Cooperation
SOSSPA	Soroti Sweetpotato Producers Association
UNBS	Ugandan National Bureau of Standards
UNFFE	Uganda National Farmers' Federation
UNIDO	United Nations Industrial Development Organization
ZARDI	Zonal Agricultural Research and Development Institute (within NARO, Uganda)

Abstract

The Participatory Market Chain Approach (PMCA) was developed by the Papa Andina Regional Initiative of the International Potato Center (CIP) to improve the competitiveness of potato market chains and small potato producers in the Andean region of South America. Beginning in 2005, CIP and Papa Andina partnered with the Regional Potato and Sweetpotato Improvement Network in Eastern and Central Africa (PRAPACE) and several local research and development (R&D) organizations to introduce the approach into Uganda and apply it in the commodity chains for potatoes, sweetpotatoes, and vegetables. The study reported on here was conducted to assess the process of introducing the PMCA into Uganda and the results to date, to assess the prospects for future use of the PMCA in Uganda and elsewhere in the region, and to identify essential elements of a strategy for introducing the PMCA into new settings. The overall conclusion is that the PMCA has proven effective in Uganda for strengthening innovation capacity and for developing market chain innovations that benefit small farmers as well as other market chain actors. Valuable capacities for innovation have been developed, particularly in the realms of knowledge, attitudes, skills, and social capital. These new capacities are potentially valuable assets for stimulating future innovations in market chains in Uganda or in other countries of the region. The application and results of the PMCA to date have stimulated considerable interest in the approach in Ugandan R&D organizations, in policy circles, and among those market chain actors who have participated in or heard about the work. Yet, follow-up work is needed to ensure that prototype innovations are adequately refined and to consolidate the multi-stakeholder platforms and social capital created. Based on the experiences assessed, it is concluded that the PMCA has potential value as a means to stimulate pro-poor innovation in Uganda and in other countries of the region. Key elements of a strategy for introducing the PMCA into new settings are identified.

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The author would like to acknowledge the encouragement, assistance and support provided by many people during the preparation of this study. Berga Lemaga, Immaculate Sekitto, and Sarah Mayanja coordinated my visits to Uganda in July 2006 and September-October 2007 and provided invaluable information and insights into the process of introducing the PMCA into Uganda. Thomas Bernet supplemented this with additional background information on the theoretical and practical aspects of developing the PMCA in the Andes and introducing the approach to Uganda. Martha Ameru, Rachel Wakulira, and other members of PRAPACE provided invaluable assistance during my visits.

Many people involved in the PMCA exercise in Uganda generously took time from their busy schedules to meet with me and explain the work of their commodity groups. In particular, Beatrice Akello, Lucy Aliguma, John Kavuma, Peter Lusembo, and Damalie Magala provided unique insights into the pros and cons of the PMCA, the intricacies of its application, and the options for future work to promote pro-poor innovation in Uganda.

Dan Kisauzi and Peter Ngategize contributed significantly to the analysis by asking challenging questions about the sustainability of the PMCA, its practical benefits, and ways to move forward from the work begun and the results achieved to date.

At CIP, Pamela Anderson, Charles Crissman, André Devaux, Graham Thiele, Claudio Velasco, and Thomas Zschocke provided encouragement and guidance for the study and useful feedback on preliminary results.

The Department for International Development (DFID), United Kingdom through its Crop Post-Harvest Programme, provided funding for Phase 1, and the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) provided funding for Phase 3 of the PMCA in Uganda. Without the support of DFID, the work reported on here would not have begun. And without the support of ASARECA, it would not have been completed.

Last but not least, thanks to the many individuals and organizations that participated actively during this first exercise with the PMCA in Africa, making significant contributions both to the approach itself and to this study.

SUMMARY

This report presents results of a study of the Participatory Market Chain Approach (PMCA) in Uganda commissioned by the Papa Andina Initiative and the Impact Enhancement Division of the International Potato Center (CIP) and the Regional Potato and Sweetpotato Improvement Network in Eastern and Central Africa (PRAPACE). The study was carried out to assess the process of introducing, validating, and refining the PMCA in Uganda, to assess the main results obtained in Uganda to date, to evaluate the prospects for future use of the PMCA in Uganda and elsewhere in Sub-Saharan Africa, and to identify key elements of an effective strategy for introducing the PMCA in new settings.

Background on the PMCA

Contemporary agricultural development is taking place in the context of rapid urbanization and market integration. In modernizing agricultural markets, small farmers are often at a significant disadvantage relative to larger commercial farmers, who benefit from economies of scale and better access to information, services, technology, and capital. The PMCA was developed by CIP's Papa Andina Regional Initiative to improve the competitiveness of potato market chains and of small potato producers in the Andes of South America. This work was supported by the Swiss Agency for Development and Cooperation (SDC). The PMCA engages those who make their living from a market chain – the so-called 'market chain actors' – and agricultural service providers (such as researchers, credit providers and development workers) in facilitated group processes in which market opportunities are identified and assessed and innovations are developed. The PMCA is implemented in 3 phases:

Phase 1. Familiarization with the market chain and the key actors.

Phase 2. Joint analysis of potential business opportunities.

Phase 3. Development of market-driven innovations.

A research and development (R&D) organization initiates the PMCA by selecting the market chains on which to work, identifying potential R&D partners and carrying out exploratory, diagnostic market research. Key goals of Phase 1 are to become familiar with market chains and market chain actors, and to motivate these actors to participate in the PMCA process. In Phase 2, the R&D organization facilitates meetings that are designed to foster mutual trust and knowledge sharing among participants. In Phase 3, the market chain actors collaborate in practical innovation processes, with support from R&D organizations.

Introducing the PMCA to Uganda

Beginning in 2005, the Papa Andina Initiative and PRAPACE partnered with several local R&D organizations to introduce the PMCA into Uganda and applied it in the commodity chains for potatoes, sweetpotatoes, and vegetables. Funding for this work was provided by the Department for International Development of the United Kingdom (DFID), CIP, and the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA).

Many organizations and individuals have played key roles in introducing, validating, and refining the PMCA in Uganda. These include an international agricultural research center (CIP), an Andean-based partnership program (Papa Andina), an African regional commodity program (PRAPACE), a National Agricultural Research Organization (NARO-Mukono), a ministry-level project (Competitiveness and Investment Climate Strategy, CICS), a non-governmental organization (Africa 2000 Network, A2N), and a private company (the Ssemwanga Group).

Strategies employed to introduce the PMCA

Several strategies were employed to introduce, validate, and refine the PMCA in Uganda:

1. Participatory planning, decision making, and evaluation involving local actors;
2. A study tour to Peru and Bolivia;
3. PMCA training, including use of a *PMCA User Guide*, hands-on work with the PMCA, and backstopping and coaching;
4. Knowledge sharing among practitioners;
5. Learning-oriented evaluations.

These strategies were effective in motivating people and developing professional capacities and social capital for carrying out the PMCA. Furthermore, implementation of the approach has resulted in a number of commercial and institutional innovations. Nevertheless, the Ugandan PMCA practitioners believe they would have benefited from access to more practical training materials (including case studies), more frequent and direct access to guidance, coaching, and feedback from a PMCA expert, more efforts by CIP and PRAPACE to build commitment to the PMCA at senior management level within their organizations, and follow-up after completion of Phase 3.

Results to date

The results of this work with the PMCA have exceeded initial expectations. The PMCA has proven useful in Uganda both for strengthening innovation capacity and for developing pro-

poor market chain innovations. Valuable capacities for innovation have been created, particularly in the realms of knowledge, attitudes, skills, and social capital. These new capacities are valuable assets that can be applied in the future to stimulate innovation not only in Uganda's potato, sweetpotato, and vegetable market chains, but in other chains, both in Uganda and in other parts of Sub-Saharan Africa.

The commodity teams that applied the PMCA have developed a number of commercial innovations. The first three of these innovations have proven their market viability and are in commercial production; the others are in the form of prototypes that are being tested and refined.

Innovations in commercial production:

- Improved packaging and labeling for a leading Ugandan potato crisp product.
- A new sweetpotato variety successfully introduced into Uganda's leading supermarket.
- An improved commercial tomato sauce product.

Innovations being tested and refined:

- A new orange sweetpotato crisp product developed and tested.
- Two brands of composite flour containing orange-fleshed sweetpotatoes developed, with attractive packaging.
- A tomato chili appetizer product, a hot pepper paste product and a pickled hot pepper product developed and being tested.
- A market stall / kiosk developed for selling clean, sorted, and graded sweetpotatoes in Kampala's largest open-air market.

Aside from the commercial innovations, use of the PMCA has also led to important institutional and technological innovations. Motivated by his participation in the vegetable group, an exporter has established a contract farming scheme for producing and exporting fresh hot peppers. As a result of the work of the sweetpotato commodity group, a 'Sweetpotato Market Chain Club,' representing all market segments, has also been established. Participants hope to formalize the club as a market chain association, to serve as a platform for future innovation processes.

Some commercial innovations have stimulated subsequent institutional innovations. Faced with an unreliable supply of fresh potatoes for processing, the potato commodity group organized a meeting in the Kabale potato producing region, for processors and market agents to meet with potato farmers and explore ways to better organize the supply of potatoes to Kampala-based processors.

To date, relatively few technological innovations have resulted from the PMCA work. However, there are some cases. For example, the hot-pepper contract farming scheme mentioned above (an institutional innovation) includes the provision of technical assistance to small farmers, which includes the use of improved planting material (a technological innovation).

Prospects for sustained use of the PMCA in Uganda

The application and results of the PMCA have stimulated considerable interest in the approach in Ugandan R&D organizations, in policy circles, and among market chain actors who have participated in the work or heard about it. The Zonal Agricultural R&D Institute of the NARO in Mukono is committed to continuing its leadership of the sweetpotato commodity group, and plans to extend use of the PMCA to one additional commodity in the near future. PMCA work has been incorporated into the institute's budget. The Director of NARO has expressed interest in mainstreaming use of the PMCA throughout the organization. The National Coordinator of the CICS Secretariat has committed the secretariat to applying the PMCA to two new commodities with export potential. The President of the Federation of Associations of Ugandan Exporters (FAUEX), has stated his strong support for continued application of the PMCA in the country.

With the completion of Phase 3 of the PMCA, the role of Papa Andina in introducing, validating and refining the approach has ended. The main issues now are who will lead future work with the PMCA, how the work will be organized, and how the necessary resources will be marshaled. PMCA participants have identified five short-term priorities:

- Follow-up with specific commercial innovations to ensure that the new products are adequately refined and move into commercial production;
- Strengthen links between the on-going market innovation processes and technological innovation needed for farmers to respond to the new market demands;
- Assist the existing commodity groups to establish multi-stakeholder platforms that can support continued future innovation in their respective commodities;

- Review the status of the innovations in six to nine months;
- Support new applications of the PMCA in other commodity chains.

Potential use of the PMCA elsewhere in Sub-Saharan Africa

Like Uganda, other countries in the region could benefit from use of the PMCA. Introducing the approach elsewhere would be less costly and could be achieved more quickly because other countries could benefit from the considerable capacity that Uganda has developed for application of the PMCA.

Based on experiences with the PMCA in the Andes and Uganda (see Devaux et al., 2007), success with the PMCA in new settings is likely to be greatest where R&D organizations are open to experimenting with new approaches for facilitating innovation processes and where there are R&D professionals who are knowledgeable about market chains and experienced with facilitation of teamwork. Appropriate commodity chains for work with the PMCA have high transactions costs that could potentially be reduced through collective action and offer potential for product differentiation and value addition. Implementation of the PMCA is aided by capable leadership within the chain and previous positive experiences with collective action.

Key elements of a capacity development strategy

Based on this assessment of experiences with the PMCA in Uganda, it is concluded that future work to introduce the PMCA into new settings should be guided by a capacity development strategy with the following key elements:

1. Participatory planning, decision-making, and evaluation, involving local actors;
2. Interaction and negotiation with senior managers in lead R&D organizations to ensure institutional commitment to experimenting with the PMCA;
3. A study tour to Uganda or another site where the PMCA has been successfully used, to meet with PMCA practitioners and observe results;
4. A comprehensive training strategy including formal PMCA training workshops, using the PMCA User Guide and complementary training materials; practical hands-on work with the PMCA, in commodity groups; and backstopping and coaching provided by experienced PMCA facilitators, involving both face-to-face and virtual communications;
5. Knowledge sharing among the PMCA practitioners working in different teams;
6. Learning-oriented evaluations to improve the process and document results.

When introducing the PMCA to new settings, it needs to be kept in mind that each situation presents a unique combination of socio-economic, political, institutional and technological conditions, and that the approach will need to be customized for use in each country and market chain. Issues of appropriateness of the approach and institutional sustainability should be dealt with as priorities from the outset of any process of introduction.

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INTRODUCTION

In Africa as elsewhere, agricultural development is taking place in the context of rapid urbanization and market integration. The livelihoods of small farmers are influenced more and more by the demands of urban consumers, market intermediaries, and food industries. In modernizing agricultural markets, small farmers are often at a significant disadvantage relative to larger commercial farmers, who benefit from economies of scale and better access to information, services, technology, and capital.

Collective action, usually in the form of farmer cooperatives, has been proposed as one way to improve the prospects of small farmers in emerging high-value agricultural markets. Since the late 1990s, the International Potato Center's (CIP) Papa Andina network has worked with its partners in South America to improve the competitiveness of small potato producers in the Andes through innovative approaches to collective action involving not only small farmers but others whose livelihoods depend on the production and marketing of agricultural commodities. Over time, they developed the 'Participatory Market Chain Approach' (PMCA), which brings small farmers together with other market chain actors, researchers, and service providers to produce and share knowledge, build trust, and develop innovations that benefit small farmers as well as other market chain actors.

Based on early successes with the PMCA in the Andean region, in 2004, the Crop Post-Harvest Programme of the United Kingdom's Department for International Development (DFID) encouraged Papa Andina to introduce and test the PMCA in Uganda, where the results of sweetpotato research and development (R&D) were being constrained by marketing problems. To introduce and test the PMCA in Uganda, Papa Andina developed a joint project with the Regional Potato and Sweetpotato Improvement Network in Eastern and Central Africa (PRAPACE). This capacity-development project included only the first of the PMCA's three phases, because DFID support was available only for 2005. After Phase 1 was completed at the end of 2005, there was a short break in activities until Papa Andina, PRAPACE, and CIP's Sweetpotato Project in Uganda were able to bring together the funding needed for Phase 2. Later, when

Phase 2 was completed in August 2006, there was another delay until funding for Phase 3 was obtained from the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA). PRAPACE took the lead in negotiating this funding, with support from Papa Andina and CIP's Impact Enhancement Division. Implementation of Phase 3 began in February 2007 and was completed in September of the same year.

Those who have supported the process of introducing, validating, and refining the PMCA and are considering using the approach in the future are eager to know the results of the work in Uganda. For this reason, Papa Andina and PRAPACE commissioned the study reported here. As the first pilot tests of the PMCA have recently been completed and many innovations are just now entering into commercial application, it is too early to assess its ultimate benefits and impacts in Uganda; these will emerge over a period of years. Nevertheless, it is possible to assess the early results of the work and respond to the following types of question:

- How effective has the process of introducing, validating, and refining the PMCA been in Uganda?
- How useful has the PMCA proven to be?
- What have been the practical results to date?
- What have been the main challenges faced during the introduction and use of the PMCA in Uganda?
- Is use of the PMCA sustainable?
- What are the prospects for using the PMCA in other settings – both in Uganda and elsewhere in the region?
- What are the essential elements of an effective strategy for introducing the PMCA into new settings (countries or commodity chains)?

This report addresses these questions in the following way:

Section 2 presents the study objectives, methods, and information sources.

Section 3 provides background information on the genesis of the PMCA in Papa Andina's work with small farmers in South America and describes the main features of the approach.

Section 4 summarizes the timeline of activities carried out to introduce, validate, and refine the PMCA in Uganda.

Section 5 identifies the key institutional actors that have taken up the PMCA in Uganda and comments on their reasons for doing so. It then comments on the motivations of key actors for getting, and staying, involved.

Section 6 describes and assesses the various strategies that have been used to introduce the PMCA in Uganda, notes some challenges faced by Ugandans in implementing the PMCA, and identifies some areas in which the strategies used to introduce the PMCA could be improved.

Section 7 describes the innovation processes that have taken place in the three commodity groups (focusing on potato, sweetpotato and vegetables respectively), in the form of ‘innovation histories’. These histories illustrate how different activities and events triggered learning processes, which sometimes led to commercial, technological, or institutional innovations. This section ends by identifying some common factors that have stimulated innovation.

Section 8 pulls together information on the main results to date of these first applications of the PMCA in Uganda. It describes the commercial, institutional, and technological innovations produced, the innovation capacities developed, and the interest stimulated in the PMCA in Uganda.

The final section of the report, *Section 9*, discusses the prospects for future use of the PMCA in Uganda and beyond.

STUDY OBJECTIVES AND METHODS

This study was commissioned by Papa Andina, CIP's Impact Enhancement Division, and PRAPACE to: (1) assess the process of introducing, validating, and refining the PMCA in Uganda; (2) assess the main results obtained in Uganda to date; (3) assess the prospects for future use of the PMCA in Uganda and elsewhere in Sub-Saharan Africa; and (4) identify essential elements of an effective strategy for introducing the PMCA in new settings.

The study draws on a number of information sources, including key informant interviews, participatory review exercises, project documents, and direct observations. The author received excellent progress and activity reports prepared by CIP, Papa Andina, PRAPACE, and participating Ugandan organizations.

In 2006, the author reviewed the results of Phases 1 and 2, and provided suggestions for Phase 3 (Horton, 2006). Prior to traveling to Uganda in 2006, he interviewed 17 people who had been involved in the Uganda work, in Peru, Bolivia, and The Netherlands. In July 2006, he traveled to Uganda for ten days. During this visit, he met with key individuals involved with the introduction of the PMCA to Uganda and attended meetings of PMCA practitioners and commodity groups. During this visit, a review workshop was organized in which the three commodity teams presented progress reports on their activities and participants assessed the strategies used to introduce, validate, and refine the PMCA. Participants also identified what they believed were the most important results of the PMCA to date and developed a list of suggestions for improving work with the PMCA. During this visit, the author drafted a review report, presented and discussed preliminary findings with a group of interested parties, and received useful feedback.

In September 2007, the author returned to Uganda for 16 days to attend the Final PMCA Event (with over 250 participants), interview PMCA participants and stakeholders, and observe the innovations developed. A second participatory review workshop was organized to develop innovation histories for the three commodity groups, identify challenges faced by the groups in implementing the PMCA, and brainstorm on scenarios for future work with the PMCA and market chain innovation more broadly. During this visit, the author drafted a preliminary version of the present report, discussed study findings with stakeholders, and obtained valuable feedback. Later, comments on preliminary versions of this report were provided by Beatrice Akello, Lucy Aliguma, Thomas Bernet, André Devaux, Berga Lemaga, Damalie Magala, Sarah Mayanja, Immaculate Sekitto, and Graham Thiele. Nevertheless, the author is fully responsible for any remaining errors and omissions.

BACKGROUND ON THE PARTICIPATORY MARKET CHAIN APPROACH

Origin and development of the approach

Importance of market chain innovation for rural poverty reduction

In Uganda, as elsewhere, agricultural development is taking place in the context of rapid urbanization and market integration. Urban consumer demand and global market forces are increasingly driving agricultural development, confronting farmers with new market challenges as well as opportunities. Urbanization and increasing participation of women in the labor force are stimulating a dietary transition from traditional staple foods towards convenience foods, animal protein, fresh dairy products, and higher consumption of fresh fruits and vegetables. The importance of packaged foods and supermarkets is growing. Demand is also increasing for higher quality foods that meet increasing safety standards. Supermarkets are becoming major players in vertically integrated food marketing systems. As a result of all these trends, the production practices and livelihoods of small farmers are being influenced more and more by the demands of urban consumers, market intermediaries, and food industries (Henson, 2007; Wilkinson and Rocha, 2006).

In contemporary agricultural markets, small farmers are often at a significant disadvantage in relation to larger commercial farmers who can supply larger volumes of quality-assured products and have better access to information, services, technology and capital (Johnson and Berdegué, 2004). Small farmers' limited access to physical and financial resources restricts their ability to expand their scale of operations and invest in technologies that increase efficiency and add value to primary production. Many small farmers also have limited technical skills and poor access to information and training for improving their production practices. The limited market surplus of individual small farmers inflates per-unit costs of assembly, handling, and transportation. Small farmers also lack basic knowledge of the marketing system, current information on prices and market conditions, and bargaining power (Kruijssen, Keizer, and Giuliani, 2007; Berdegué, 2001). A recent study of new markets and institutions (Henson, 2007) identifies a number of capacities that countries need to enter and maintain a presence in high-value markets. These include, in increasing order of complexity and cost: capacity to produce to basic quality standards; capacity to supply on a reliable basis to strict quantity, timing, and quality-control requirements; capacity to comply with strict food safety and quality standards; advanced logistical capacity to enable identity preservation and traceability through the supply chain; and finally, capacity to undertake product innovation on a continuous basis to maintain and enhance value as markets evolve. Countries and sectors that began operating in high-value markets early on have significant advantages over others, because they have developed their capacities over time. Late-comers

now face much greater initial challenges to enter new markets, and they will need to develop their capacities much more rapidly.

Market-chain innovation is an urgent priority for countries and sectors that are not already participating actively in high-value markets. As described in the next section, the PMCA was developed to assist market chain actors to work with R&D organizations and other agricultural service providers to develop the capacities needed to enter and thrive in high value agricultural markets in ways that benefit small farmers.

Development of the PMCA

Various approaches have been proposed to improve the prospects of small farmers in agricultural markets, including collective action via farmer organizations and cooperatives (Shepherd, 2007; Chirwa et al., 2005). The PMCA engages small farmers, market agents, and agricultural service providers in a collective action process aimed at fostering pro-poor market-chain innovation. Such innovation improves the competitiveness of market chains and benefits small farmers as well as other market chain actors. The PMCA emerged from work carried out by CIP's Social Science Department, Papa Andina, and national R&D organizations in the Andes.

In 2002, CIP social scientists, Papa Andina, and the Project for Potato Innovation and Competitiveness in Peru (INCOPA Project) began working with a participatory approach to stimulate agricultural innovation known as 'Rapid Appraisal of Agricultural Knowledge Systems' (RAAKS). This approach, developed by Engel and Salomon (2003), brings diverse stakeholders together in a flexible, participatory process to stimulate social learning, build trust, and foster innovation among potato market chain actors. Papa Andina was searching for a practical approach to bring market chain actors together to develop innovation capacity in market chains and to produce market-led innovations. Working in the context of the market chain spurred the development of new methods, for example for building trust among people who previously distrusted one another, and for developing new products. A new approach emerged, that was named the 'Participatory Market Chain Approach'. This was documented in a *PMCA User Guide* (Bernet, Thiele and Zschocke, 2006). In 2003, when the INCOPA market chain work was reviewed in an Andean regional workshop, participants from Bolivia became interested in the approach and decided to begin experimenting with it at home. Over the next few years, the PMCA was developed and documented based on the work in Bolivia and Peru (Devaux et al., 2007).

Main Features of the approach

An action research approach¹

The PMCA is a participatory action research approach for identifying business opportunities in market chains that are important to small farmers, and then carrying out R&D activities to exploit the opportunities. Action research is a reflective process of progressive problem solving led by an applied researcher working with a team or as part of a 'community of practice'. This approach is widely used in management consulting and organizational development studies, where an applied researcher works with an organization's members to define a problem that is amenable to applied research and then to carry out the research needed to resolve the problem. Most of the research is generally done by the organization's members, who develop applied research capacities during the action research process. The PMCA applies the principles of action research to foster market chain innovation.

Description of the PMCA

The PMCA engages those who make their living from a market chain – the so-called 'market chain actors'– and agricultural service providers (such as researchers, credit providers, and development workers) in facilitated group processes in which market opportunities are identified and assessed, and innovations are developed. The PMCA is implemented in 3 phases:

Phase 1. Familiarization with the market chain and the key actors.

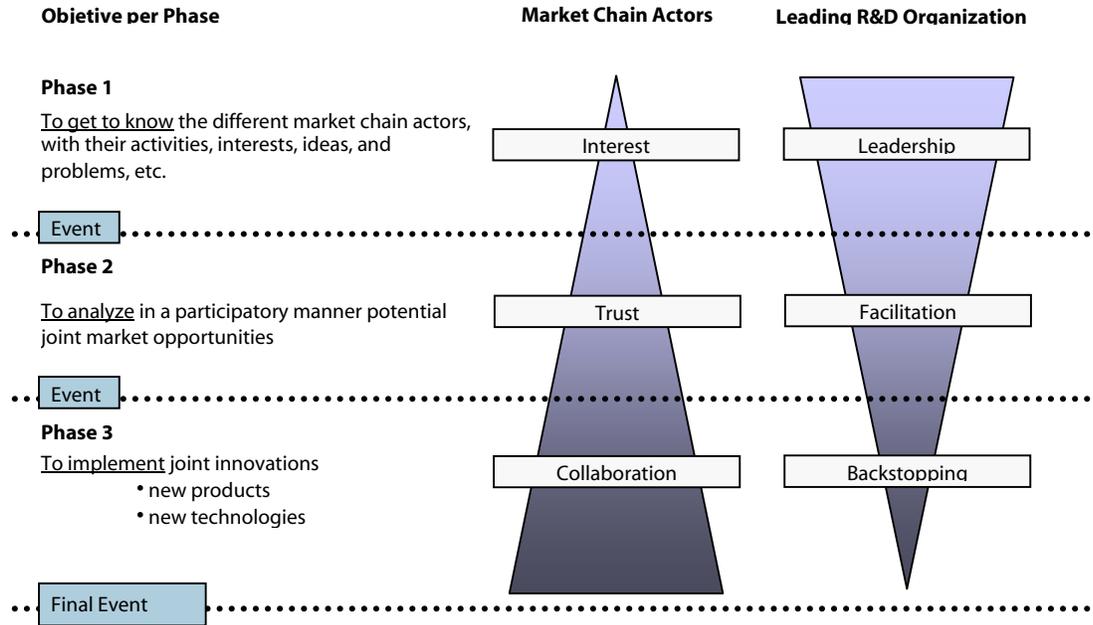
Phase 2. Joint analysis of potential business opportunities.

Phase 3. Development of market-driven innovations.

As illustrated in Exhibit 1, a R&D organization initiates the PMCA by selecting the market chains on which to work, identifying potential R&D partners and carrying out exploratory, diagnostic market research. Key goals of Phase 1 are to become familiar with market chains and market chain actors, and to motivate market chain actors to participate in the PMCA process. In Phase 2, the R&D organization facilitates meetings that are designed to foster mutual trust and knowledge sharing among participants. In Phase 3, the market chain actors collaborate in practical innovation processes, with support from R&D organizations.

¹ Useful introductions to action research and other forms of action inquiry are available in Wikipedia (www.wikipedia.org).

Exhibit 1.
The three
phases of the
PMCA.



During *Phase 1*, diagnostic research is carried out in order to become familiar with key market chain actors and understand their interests, problems and ideas. This phase is expected to take two to four months and may involve 20 to 40 interviews with diverse market chain actors. This phase ends with a public event that brings together individuals who have been involved in the PMCA process so far, including market chain actors and representatives of research organizations and other service providers, to discuss results of the market survey and to exchange ideas. Some individuals who have not been involved so far may also be invited, to gain their interest in the PMCA process and motivate them to participate in future activities.

In *Phase 2*, thematic (commodity) groups are established to explore potential market opportunities. The lead R&D organization facilitates group meetings where market opportunities are identified and discussed. The main challenge during this phase is to keep participants focused on market opportunities (rather than, for example, production problems). Six to ten meetings may be needed to analyze potential market opportunities. In some cases, specialized market studies (for example, focus groups) may be needed to complement the group work. At a final event, the market opportunities are discussed with a wider audience and new members with complementary knowledge and experience are encouraged to join Phase 3.

Phase 3 focuses on the activities needed to launch specific innovations. The time required may vary depending upon the complexity of the innovation, the capacity of the group, and biophysical, socio-economic, and institutional conditions. A rough estimate of the time needed, based on experience in Bolivia and Peru, is three to six months. Phase 3 closes with a large event to which a much wider group is invited, including for example, political officials, donor representatives and members of the press.

Based on experiences with the PMCA in Peru and Bolivia, 12 to 15 months seems to be adequate to implement the three phases of the PMCA.

TIMELINE FOR INTRODUCTION THE PMCA

The process of introducing the PMCA in Uganda involved a number of activities over two and a half years. The main activities included training workshops in Uganda and the Andes, a survey of R&D organizations with interest and expertise in market-chain development, market surveys, group meetings, focus groups, backstopping visits from PMCA experts, reviews of progress, and assorted product-development activities related to specific innovations developed by the three commodity groups during Phase 3 (see Photographs 1 and 2 and Exhibit 2).

During Phase 1 (March to December 2005), a core group of R&D professionals was formed and gained familiarity with the selected market chains and market chain actors. This phase began with a visit by the Ugandan coordination team to the Andes. This was followed by a survey of R&D organizations and the first PMCA training workshops in Uganda in April. Proposals for each market chain were then prepared and reviewed in May and June. Fifteen Ugandans, who were expected to participate in the PMCA process, traveled to Peru and Bolivia for a study tour and second training workshop in July. After preparation of work-plans and budgets for three commodity groups, diagnostic research was carried out for the selected market chains in September and October. In October, a PMCA specialist from CIP visited Uganda to support the market chain research and assist in preparations for the final events of Phase 1, which were held in November. In December, a review workshop for Phase 1 was carried out, with participants from Uganda, Kenya, Tanzania, Peru and Bolivia.

Phase 2 began after a two-month delay, during which funding was negotiated from PRAPACE, CIP's Sweetpotato Program, and Papa Andina. Phase 2 began in March 2006 with the third PMCA training workshop. Subsequently, a number of commodity group meetings were held to assess potential market opportunities. In July a review of progress in introducing and testing the PMCA in Uganda was carried out (Horton, 2006), and in August, final events were held for each of the three commodity groups. Several market opportunities were identified by the three groups (see Exhibit 3).



1a. Field visit during first PMCA training workshop in Uganda.



1b. Visit to farmer association, APROTAC, in Colomi, Cochabamba, Bolivia.



1c. Visit to potato crisp processing enterprise, Lucana, in Cochabamba, Bolivia.



1d. Dan Kisauzi, Director, Capacity Strengthening and Eastern Africa, RIUP Programme, and Bolivian farmer, La Paz, Bolivia.

Photograph 1. Capacity building on PMCA in Uganda and the Andes.

Photograph 2.
Application of
PMCA in Uganda.



2a. Participants in PMCA training in Uganda.



2b. Rapid market appraisal in Uchumi Supermarket in Kampala, Uganda, as part of PMCA training.



2c. Sweetpotato Group: final event of Phase 1.



2d. Media interest in PMCA: potato crisp processor being interviewed at the Final Big Event.



2e. Big Final Event: introduction by Peter Lusembo from NARO-ZARDI Mukono.

Exhibit 2. Timeline of major activities used to introduce the PMCA to Uganda

Month/Year	Major activity
<i>Phase 1</i>	
3/05	Initial visit of Ugandan project coordinators to Peru
3-4/05	Survey of R&D organizations
4/05	First PMCA training workshop
5-6/05	Preparation and review of commodity market chain proposals
7/05	Study visit and second PMCA training workshop in Peru and Bolivia
8/05	Preparation of work-plans and budgets for three commodity groups
9-10/05	Diagnostic research on commodity chains and market chain actors
10/05	Backstopping visit by PMCA specialist from CIP, Lima
11/05	Final events for Phase 1 (separate events for the 3 groups)
12/05	Review workshop for Phase 1
<i>Phase 2</i>	
3/06	Third PMCA training workshop: Initiation of Phase 2
4-7/06	Meetings of commodity groups and sub-groups
7/06	Review of progress with Phases 1 and 2
8/06	Final events for Phase 2 (separate events for the 3 groups)
<i>Phase 3</i>	
2/07	Fourth PMCA training workshop: Initiation of Phase 3
2-4/07	Rapid market surveys: to assess market conditions and competition
2-4/07	Focus groups: to test products under development
2,7,9/07	Backstopping visit by PMCA specialist from CIP, Lima
5-7/07	Additional rapid market surveys
5-8/07	Additional focus groups
7-8/07	Work with marketing specialists, graphic designers, etc.
9/07	Final event for Phase 3 (with stakeholders of all 3 commodity groups)
9/07	Review of results of the entire PMCA process

Exhibit 3. Market opportunities identified during Phase 2

Potato Group
Improved crisps: processing, packaging, labeling (branding)
Efficient use of processing waste: biogas and animal feed
Graded ware potato bags (to respond to quality requirements of urban clients, processors, etc.)
Sweetpotato Group
Non-orange-fleshed sweetpotato (OFSP) for urban supermarket (with improved bagging)
OFSP for processing into composite flour (with improved packaging)
Different varieties for export
Promotion of local varieties in urban areas
Demand creation especially for healthy OFSP varieties
Vegetable Group
Quality tomatoes for urban markets (including supermarkets)
Tomato processing: solar drying and tomato puree (including sauce, chili, juice, paste)
Improving packaging, labeling and merchandising of tomato and hot pepper products
Quality hot pepper for export (potentially organic)
Pickled hot pepper in vinegar
Solar dried hot pepper and hot pepper paste
Pesticide from hot pepper

Source: T. Bernet. Trip report: PMCA backstopping in Uganda, August 22-29, 2006.

After the completion of Phase 2, there was a six-month gap in activities before funding was obtained for Phase 3 – this time from ASARECA. The final phase began with the fourth PMCA training workshop. This was followed by three main types of activity, which contributed to the development of specific innovations. *Rapid market surveys* were used to gain information on products currently in the market, with which proposed new products would have to compete. *Focus groups* were organized for consumers to test proposed new products alongside those currently available in the market. Numerous *ad hoc activities* were carried out, including consultations, tests, visits to processing facilities, discussions with experts (for example, from the Ugandan National Bureau of Standards (UNBS) and the United Nations Industrial Development Organization, (UNIDO)), and work with graphic designers and others with expertise needed for product development. Different activities were carried out by each of the three groups depending on the types of innovation they were developing. Activities during this phase were more hectic and less predictable than they had been in Phases 1 and 2, making planning, budgeting, and coordination more difficult. The final event of Phase 3 was held in September 2007, involving stakeholders from all three commodity groups.

KEY ACTORS, ROLES, AND MOTIVATIONS

In introducing the PMCA, a number of the approach's developers and practitioners from CIP, Papa Andina, and Andean partner organizations shared their knowledge and experience with Ugandan professionals, through face-to-face interactions in Uganda and the Andes. Notable among these were Claudio Velasco and Thomas Bernet, who had been deeply involved with developing the PMCA in Bolivia and Peru. After Phase 1, Bernet was the main person to backstop the PMCA work in Uganda. Thomas Zschocke, co-author of the *PMCA User Guide*, visited Uganda twice during Phase 1 to assist with capacity development. Graham Thiele, co-author of the *PMCA User Guide* also made two visits to backstop PMCA work in Uganda during Phase 3.

In Uganda, Berga Lemaga, PRAPACE Coordinator, provided continuous support to the process of introducing and testing the PMCA. Immaculate Sekitto coordinated the work during Phases 1 and 2, and Sarah Mayanja coordinated Phase 3. During Phase 1, partnership agreements were negotiated with four R&D organizations, which nominated four professionals (Beatrice Akello, Lucy Aliguma, Damalie Magala, and Sarah Mayanja) to serve as core team leaders. During Phases 2 and 3, the commodity teams quickly grew to include 20 'Core Team Members' representing 14 R&D organizations – mainly non-governmental organizations (NGOs) but also including research organizations, extension projects, and private firms.

It is noteworthy that women played key roles in leading the PMCA process in Uganda, whereas previously they had been considered 'outsiders' in the marketing arena. The women who coordinated the process and led the commodity groups proved to be excellent facilitators and mentors. As one of the coordinators noted:

"The process required skills in coaching, handholding and a lot of patience, since different options needed to be identified and explored, and at times some activities had to be repeated until the results were acceptable.

The women who led the groups handled these difficulties quite well."

Sarah Mayanja, Coordinator, Phase 3

R&D Organizations

Several R&D organizations were involved in introducing and testing the PMCA in Uganda. CIP provided the overall institutional umbrella for the effort. Papa Andina and CIP's Impact Enhancement Division are working to promote the use of the PMCA in new regions and supported the implementation of the PMCA in Uganda. Within CIP, Papa Andina led and provided backstopping for the effort. CIP's Training Unit provided additional expertise in training and capacity development. As an international agricultural research center, CIP was interested in

assessing the utility and feasibility of the PMCA in Sub-Saharan Africa – where biophysical, socio-economic, and institutional conditions are very different from those in the Andes, and where rural poverty reduction is a more pressing priority.

In Uganda, five main R&D organizations played leading roles in introducing the PMCA. PRAPACE provided overall coordination, technical inputs, and administrative support. The Africa 2000 Network (A2N), Mukono Zonal Agricultural R&D Institute (ZARDI), the Competitiveness Investment Climate Strategy (CICS) Secretariat, and the Ssemwanga Group nominated professionals who became leaders of the commodity teams that tested and implemented the PMCA. These organizations are briefly introduced below:

The Regional Potato and Sweetpotato Improvement Network in Eastern and Central Africa (PRAPACE)

PRAPACE coordinated the work in Uganda, provided technical inputs, and administered funding from various sources. Berga Lemaga, PRAPACE Coordinator, was personally involved in many aspects of the work. A project coordination office was established at PRAPACE headquarters in Kampala, and an experienced manager who had previously coordinated DFID-funded sweetpotato production and marketing projects served as the Ugandan PMCA coordinator during Phases 1 and 2. PRAPACE's motivation for participating in this role stemmed from its interest in having an effective approach for expanding the market potential of potato and sweetpotato, important commodities for the network.

Ugandan partners were identified through a survey of R&D organizations in Phase 1. Four organizations were invited to assume leadership roles in coordinating the work of commodity groups in Phases 2 and 3. These four organizations continued in their lead roles throughout the PMCA process.

Africa 2000 Network-Uganda (A2N-Uganda)

A2N-Uganda is a NGO that has operated in Uganda since 1990. Its mission is to alleviate poverty by supporting smallholder farmer groups to undertake initiatives geared towards livelihood improvement and natural resources regeneration and conservation. It is part of the larger A2N network operating in 13 African countries, with headquarters in Kampala. Over the years, A2N's focus has broadened from conservation-related activities to production support and market access for small farmers. Consequently, when the PMCA Coordinator contacted A2N's Executive Director, she was eager for her organization to participate in the PMCA exercise and gain access to this new approach to pro-poor market chain innovation. A recently recruited agricultural

economist with experience in marketing, Sarah Mayanja, was assigned to work with the PMCA team.

Mukono Zonal Agricultural R&D Institute (ZARDI), within the National Agricultural Research Organization (NARO)

The Mukono Institute (henceforth referred to simply as Mukono) is one of seven zonal agricultural R&D institutes responsible for adaptive research and technology dissemination in Uganda. It is the largest zonal institute and the closest to Kampala. When the Director of Mukono, Peter Lusembo, learned about the PMCA, he was eager to become involved. As he puts it:

“While I am myself a biological scientist, I have come to realize that all our work must be driven by the market. If the farmer cannot sell what we help him produce, we haven’t really helped him.”

Lusembo assigned one of his senior scientists, Beatrice Akello, an agronomist with a doctorate from Reading University, UK, to work with the PMCA team. He has also remained personally involved throughout the PMCA exercise.

Competitiveness Investment Climate Strategy (CICS) Secretariat

This high-profile initiative, housed in the Ministry of Finance, Planning and Economic Development is responsible for all sectors, but pays special attention to agriculture due to its large role in the economy. The National Coordinator, Peter Ngategize, is an agricultural economist who worked for several years for the International Livestock Centre for Africa. When contacted by the PMCA Coordinator, he wanted the CICS Secretariat to be involved, to assess the potential utility of the approach. He requested that a trusted consultant, Lucy Aliguma work with the PMCA team. Ms. Aliguma is an agricultural economist with marketing experience. Dr. Ngategize also kept personally in touch with the PMCA process, by participating in the Final Events of the three phases.

Ssemwanga Group

This is a private consulting company, owned and operated by a post-harvest technologist, Dr. James Ssemwanga, which specializes in marketing work and also owns farmland and a horticultural packing facility. Dr. Ssemwanga was interested in working with the PMCA group to gain access to a potentially valuable approach that he could apply in his consultancies and also in his farming and marketing work. He requested one of his consultants, sociologist Damalie

Magala, to join the PMCA Core Team. He also became personally involved in some of the commodity teamwork and participated in the Final Events of the three PMCA phases.

In addition to these four R&D organizations that provided leadership for the commodity groups that implemented the PMCA, several others also participated in the groups, some throughout the entire process.

Market chain actors

More than 100 market chain actors – including representatives of farmers’ groups, local market agents, processors, managers of urban markets, and exporters – participated in activities of the commodity groups. Farmers’ groups, usually established by NGOs or governmental agencies such as the National Agricultural Advisory Services (NAADS) are common throughout Uganda, and several of them participated in the commodity groups. Various types of market agents were also involved, including some who purchased commodities directly from farmers in production zones, some based in large Kampala markets, and some who export agricultural products to Europe and other regions. Many of the market chain actors participated sporadically in PMCA activities, some participated early on and then dropped out, others joined the process during Phase 2 or Phase 3, and a few participated loyally throughout the entire process. Two examples of market chain actors who were very influential in the PMCA process are Thomas Bukenya and John Kavuma, key actors in the potato and vegetable groups, respectively. The potato group had over ten potato crisp processors who participated throughout the entire process. Despite their being competitors, the processors worked well together in their quest to improve their products and their businesses. Traders from Kalerwe market in the sweetpotato group were also very influential in the process.

Motivations for involvement

Core team leaders and members

A major reason for these professionals to become, and stay, involved with the PMCA exercise – often investing significant amounts of unpaid time and effort – was to learn a new approach and a set of tools that they could use in their current or future employment. Several of these professionals state that they expect to work as ‘PMCA consultants’ in the future, and some of them have already done so. Over time, a few core team members abandoned the process, but significantly, all of the leaders continued throughout the process, despite the interruptions in activities between phases.

Representatives of farmers' organizations

Farmers were motivated to participate in meetings, visits, focus groups and other activities carried out during the PMCA exercise in order to meet other market chain actors, make business contacts, see how their products were being processed or sold in urban markets, and obtain technical information and advice from participating R&D professionals or others present at these encounters. They sought information and advice not only for the commodities that were subject to the PMCA, but for all their farm enterprises.

Market agents

Local traders seemed to be motivated largely by the opportunity to learn about local market chains and business opportunities, and to establish useful contacts for their businesses. Exporters were often motivated by the prospect of improving the reliability of supplies of high-quality fresh produce for export. As quality standards for exports to Europe escalated, they were challenged to develop relationships with local suppliers who they could count on to supply high-quality produce at reasonable prices. They also needed to develop networks of professionals who could help them solve technical problems such as storage or pest issues. For these reasons, their primary reason for participating in the PMCA was to develop their networks of trusted producers, market agents, researchers, and other service providers.

Processors

The commodity groups included processors who produced potato crisps, porridge mixes containing orange-fleshed sweetpotato flour, and processed tomatoes and hot pepper. The potato crisps were already viable good-quality products in the market, and their producers participated in the commodity group mainly to learn how to improve the packaging and distribution of their products and how to establish a more dependable supply of potatoes suitable for processing. In the case of the flour and vegetable processors, they were interested in finding ways to upgrade their product marketing, product quality, and sources of input supply.

ASSESSMENT OF THE STRATEGIES EMPLOYED TO INTRODUCE THE PMCA

Strategies employed

Several strategies were employed to introduce, validate, and refine the PMCA in Uganda. These can be summarized as follows:

- Involving local actors in project planning, review, and decision making;
- Study tour to Peru and Bolivia;
- Use of a *PMCA User Guide*;
- PMCA training;
- Hands-on work with the PMCA ;
- Backstopping and coaching;
- Knowledge sharing among practitioners;
- Learning-oriented evaluation.

Involving local actors in project planning, review and decision making

In keeping with the participatory nature of the PMCA, participatory decision-making has characterized the PMCA work in Uganda. Core team members from R&D organizations were involved in planning, implementing, and evaluating each phase of the work. The core team members, in turn, engaged market chain actors in planning and reviewing each group's activities. This participatory approach fostered teamwork and ensured that project activities responded to the needs and interests of those involved. The utility of this type of strategy is supported by experience with capacity development and institutional change elsewhere (Horton et al., 2003).

Study tour to Peru and Bolivia

On the principle that 'seeing is believing', a study tour to Peru and Bolivia was organized for 15 Ugandans from R&D organizations and market chain actors. During the first workshop in Uganda, four commodity groups were established that submitted proposals to PRAPACE for work with the PMCA. Three of these (potato, vegetables and sweetpotatoes) were selected, and the members of these groups were invited to participate in the study visit and the second PMCA workshop in the Andes (see Photographs 1a to 1d: Capacity building on PMCA in Uganda and the Andes).

This event played a crucial role in the introduction and development of the PMCA in Uganda. By allowing the Ugandans to meet with people who had developed and applied the PMCA and to see it in operation in its 'native setting', the Ugandans became convinced that the PMCA 'was for real' and that it was of potential value in Uganda. More broadly, they observed a successful R&D intervention in a new setting – one that allowed them to extrapolate lessons back home. They were not visiting ultra-modern facilities in North America or Europe – of little relevance to

Uganda – but projects that made simple yet significant improvements in marketing under conditions not so different from those back home. Another important result of the trip to the Andes was the bonding that occurred within the Ugandan group, which facilitated teamwork upon their return.

The Ugandans were very impressed with the approach and the results achieved. The following quotation illustrates the importance of this experience:

“Sometimes when you read or hear about things, you still don’t really understand them. But seeing is believing. We saw what they had done in Bolivia, the successes and the high level of motivation. We saw and said, ‘If they can do it, why can’t we?’. Another benefit of the trip was that it created a sort of ‘PMCA family’. After Bolivia, my work became much easier. That trip led to a major improvement in teamwork.”

Immaculate Sekitto, Uganda project coordinator, Phases 1 and 2

Use of the PMCA User Guide

Based on PMCA work in the Andes and initial work in Uganda, a *PMCA User Guide* was prepared and published by CIP (Bernet, Thiele and Zschocke, 2006). This publication was essential for introducing the PMCA in Uganda. The commodity team leaders and core members frequently mention the value of the *PMCA User Guide*, which provides learners with a highly structured set of information on the PMCA and guidelines for how to implement it. The *PMCA User Guide* is clearly a valuable resource for introducing the PMCA into new areas.

PMCA training

Adult learning is most effective when it takes place in the context of practical activities. Classroom training is most effective when it relates to issues of importance to learners and when it is combined with practical exercises. Learning also has important social dimensions. Adults generally learn more rapidly in groups where participants bring diverse knowledge, perspectives and experiences to bear on a common topic. The more diverse the group, the greater the potential benefits of interactive learning.²

Interactive training workshops played an important role in the introduction of the PMCA and appear to have been highly effective. These events included field visits to local markets and processing facilities. The PMCA training was especially effective because it was delivered by developers of the PMCA (Thomas Bernet and Claudio Velasco) who possess deep personal

² Useful information on these and other related aspects of learning is available on the website of the “Learning Innovations Laboratory” of Harvard Graduate School of Education (<http://lila.pz.harvard.edu>).

knowledge of the approach and the related subjects they are presenting. In these training events, trainees acquired valuable ‘tacit knowledge’ from the trainers – the type of personal, subjective insight that cannot be effectively shared via publications or training materials. Participants also benefited from the combination of classroom training sessions and visits to local markets, supermarkets, processing facilities, and other relevant locations where they observed and gained important insights about the market chain, and could experiment with new concepts and tools in realistic settings with market chain actors (see Photographs 2a and 2b).

Hands-on work with the PMCA

Workshops were used to introduce basic concepts and tools at the beginning of each phase of the PMCA. After these workshops, the Commodity Teams were responsible for implementing the approach on their own, with guidance and feedback provided mainly by Thomas Bernet via e-mail. Core team members concur that their work in the commodity teams was an extremely important source of learning and capacity development, and that there could be no substitute for ‘learning by doing’ (see Photographs 2c and 2d).

Backstopping and coaching

Technical support was provided mainly by Thomas Bernet, who came to Uganda six times to provide training and backstopping for the group work. Bernet was based in Lima, and most communication between him and the Ugandan PMCA practitioners was via e-mail. Although the Ugandan team leaders highly valued the training received and the quick e-mail responses from Lima, they would have appreciated having Bernet based in Uganda to have continuous face-to-face support and feedback.

At some points during Phases 2 and 3, team leaders were concerned that their teams were under-performing. As one leader noted, *“We were not always sure we were on the right track”*. At these points of uncertainty, core team members would have valued more direct, personal access to a PMCA specialist.

Knowledge sharing among PMCA practitioners

During Phase 2, the commodity teams worked rather independently, with little knowledge sharing among them. Team leaders communicated frequently with the Project Coordinator, but there was little direct communication among the team leaders or among participants in different teams. It is likely that more interaction among the teams could have stimulated problem solving and innovation (Collison and Parcell, 2005). As a result of the review at the end of Phase 2, more knowledge sharing activities were introduced in Phase 3.

Learning-oriented evaluation

Learning-oriented evaluation has been intensively used in the process of introducing the PMCA to Uganda. The *PMCA User Guide* encourages team leaders to evaluate major events and to periodically reflect on their work and performance. At the end of each phase of the PMCA in Uganda, in-depth reviews were carried out, and the recommendations have been used to improve the process of introducing and refining the PMCA.

Challenges and improved strategies

Challenges faced by PMCA practitioners

The blend of strategies employed to introduce the PMCA to Uganda seems to have been quite effective in motivating people and developing individual capacities for carrying out the PMCA. As we will see in Sections 7 and 8, below, it was also successful in generating practical results in terms of the innovations produced. Notwithstanding these results, the PMCA practitioners faced a number of challenges in applying the approach in Uganda³:

- Funding for the PMCA exercise was obtained phase-by-phase, and this led to delays in the process. As a result, it took over two years to implement the complete process, rather than the 12-15 months it had taken in Peru and Bolivia.
- Facilitation of the commodity groups was not always in the work plans of the team leaders. Implementing the PMCA requires a substantial input of time by the commodity team leaders, and it was sometimes difficult to justify this use of time within the team leaders' organizations.
- The teams sometimes found it difficult to put into practice some of the concepts and methods presented in the *PMCA User Guide*. Consequently, they would have benefited from closer supervision and more extensive and practical training materials.
- The inherent unpredictability of innovation processes and collective action made it more difficult for PRAPACE and local R&D organizations to manage and administer resources and activities than is the case with traditional research or extension activities.
- It was difficult to convince some market chain actors to invest in new, untested processes or products. Consequently, some of the innovation processes progressed less quickly than expected and some of the innovations under development remained in the stage of prototypes at the time of the PMCA Final Meeting.

³ These challenges were identified by commodity team leaders and participants during a review workshop on October 3, 2007.

Improved strategies for introducing the PMCA

In light of these challenges, in future exercises to introduce the PMCA, the strategies employed might be improved in four areas.

- *Practical training materials.* Participants highly value the *PMCA User Guide*. Nevertheless, they would have appreciated having access to additional training and reference materials. In particular, in future more case study write-ups that illustrate how tools presented in the *User Guide* have actually been used in different situations would be helpful.
- *Personal guidance, coaching, and feedback.* Most guidance, coaching, and feedback was provided remotely from Peru and through short-term visits of PMCA specialists, generally two visits during each phase of the PMCA. The support provided was very much appreciated and appears to have been highly cost effective. Nevertheless, in future participants would benefit from more frequent interaction, ideally from a local PMCA specialist.
- *Strategy for mainstreaming the PMCA in participating organizations.* The strategy employed to introduce the PMCA focused mainly on providing training, coaching, and backstopping for the *individuals* who led the PMCA process. Less attention was paid to helping *organizations* mainstream the PMCA in their activities. In future, more interaction with senior managers might be useful to discuss strategies for mainstreaming the PMCA in their organizations and for developing funding proposals for future work with the PMCA.
- *Follow-up after Phase 3.* The strategies employed to introduce the PMCA in Uganda do not include follow-up after the completion of Phase 3. Formally ending the PMCA process has the advantage of reaching closure with the process, rather than leaving it open-ended. However, there is a perceived need within the commodity groups for follow-up activities to consolidate the commercial and technological innovations generated and provide support for fledgling stakeholder platforms. We return to these points in the concluding section of this report.

INNOVATION HISTORIES

An innovation history is an account of an innovation process prepared by people who have been involved in developing the innovation. Innovation histories have two main purposes: to allow the people involved to reflect on their experiences and draw lessons that may help them improve their future work, and to disseminate information on how innovations actually take place to a broader audience (Douthwaite and Ashby, 2005). The innovation histories summarized here were prepared by participants in the three commodity groups that piloted the PMCA in Uganda. They were prepared by members of the commodity groups during a workshop in October 2007.

Potato group⁴

The potato commodity group included participants from six R&D organizations, two farmers' groups, seven processors, two traders, and a specialized seed potato producer in Kabale. In Phase 1, core team members interviewed 86 market chain actors including producers, processors, supermarkets, hotels, fast food restaurants, and traders. No clear distinctions were found between wholesalers and brokers. Market relationships were informal and characterized by lack of trust. Flows of market information were limited. Farmers had little idea how potatoes were traded or processed in Kampala, and processors and traders in Kampala had little idea how potatoes were produced or handled in rural areas. Several market chain actors and R&D professionals expressed interest in working together to improve the marketing of fresh and processed potatoes.

During Phase 2, one sub-group discussed possible ways to improve the supply of quality, fresh consumption potatoes. The other sub-group discussed possible innovations in processing, including: production of biogas from potato processing residues, producing a snack food product from potato peels, producing potato sticks, and improving the packaging and labeling of potato crisps. Visits to markets and processors stimulated discussion of these options. However, by the end of Phase 2, little progress had been made in formulating clear marketing concepts. Then the six-month gap before activities resumed in Phase 3 led several members and institutions to drop out of the group.

When activities began again, a visit by PMCA specialist, Thomas Bernet, helped greatly to re-focus activities on assessing potential innovations through market research, focus groups, and consultations with technical experts. As a result of these assessments, most of the potential innovations were discarded or put on hold, and a single one was pursued: improving the packaging and labeling of potato crisps.

A highly committed member of the potato group, Thomas Bukenya, was producing crisps branded 'TomCris,' which focus groups found to be of excellent quality but very poorly packaged. TomCris Enterprises is a family-owned and operated processing operation, based in the owner's home. The enterprise employs 30 workers who produce potato snacks using simple technology (for example, hand peeling, cooking over firewood, and sealing packages by hand using charcoal-heated flatirons). In search of ways to improve the packaging and labeling, group members visited packaging industries, printers, and graphic designers. They also visited supermarkets to see how competitors were presenting their products. Suppliers of food processing machinery were also visited, to see what equipment might be used in the event that Mr. Bukenya wished to scale up his operations.

Motivated by the promising market prospects, Mr. Bukenya decided to invest in new packaging materials and labels for his product and made the first trial runs with the new materials. He also acquired a new machine for sealing the packages. The shelf life of the new products was tested. New focus groups were organized to test product quality and presentation of the new TomCris product, in comparison to other brands on the market. The new product was launched in various market outlets in Kampala and in Uganda's International Airport.

At present, a principal concern of Mr. Bukenya and other processors in Kampala is the development of a reliable supply of quality fresh potatoes for processing. Mr. Bukenya has taken the lead with the commodity group to develop a 'potato production specification sheet' that details the qualities desired in potatoes for processing. Up to now, the processors have purchased potatoes by the sack in the Kampala market. However, this supply is unreliable in quantity, quality, and price. As a result, the processors are organizing a meeting in Kabale – Uganda's major potato producing region – to explore the possibility of establishing direct commercial links with potato producers or market agents there. Organizing this meeting will be the last formal activity of the potato commodity group in the PMCA exercise.

Sweetpotato group⁵

Uganda is the second largest producer of sweetpotato in the world, after China. Sweetpotato is an important food crop for both rural and urban households and a source of cash income for small farmers. R&D institutions have achieved commendable success in helping farmers increase yields, but marketing problems have limited the overall growth of production and farm incomes.

⁴ Based on a report prepared by Damalie Magala, Sarah Mayanja, and Thomas Bukenya.

⁵ Based on a report prepared by Beatrice Akello, Immaculate Mugisa, Harriet Nsubuga, Wiknfred Nakyagaba, and Mary Nampeera.

The sweetpotato group included participants from five R&D organizations, four farmers' groups in Soroti, six traders and representatives of marketing bodies, four processors, and two exporters. During Phase 1, a market chain survey included visits to markets, processors, supermarkets, and large institutional consumers such as the police force and Makerere University. In total, 55 market chain actors were interviewed. Two thematic groups were established, one each for orange-fleshed sweetpotatoes (which are not traditionally consumed, but are high in vitamin A) and non-orange-fleshed varieties.

Problems were identified by each group of market chain actors. Farmers reported such things as limited access to good-quality planting material, low seasonal prices, and limited demand for orange-fleshed varieties. Wholesalers noted difficulties associated with scattered production. Retailers, supermarkets, and consumers noted inconsistent supplies, frequently poor quality of roots, and mixed varieties. Based on these results, it was decided to prioritize three areas for innovation:

- Production of flour, chips, and crisps from orange-fleshed varieties;
- Promotion of local varieties with strong consumer appeal;
- Promotion of new varieties for export and sale in supermarkets.

In Phase 2, thematic group meetings were enriched by presentations by technical experts from NARO and other R&D organizations. Rapid market appraisals were carried out in the Kalerwe market and the Uchumi supermarket in Kampala. Group visits to Maganjo Millers and Kasawo millers (flour processors), Sulma Foods (processors and exporters), the post-harvest program of NARO at Kawanda, the Kalerwe market, and sweetpotato producers in Luwero stimulated discussions and were 'eye openers' for participants, many of whom had never visited these places before.

During Phase 2, Sulma Foods introduced a new sweetpotato variety, known as *Naspot 1*, to the Uchumi supermarket. Visits to Kalerwe market, where sweetpotatoes are sold in heaps on the ground, sparked the idea to develop a kiosk for selling sorted and graded fresh sweetpotatoes and other sweetpotato products in a more attractive way.

In Phase 3, the thematic groups were reorganized so that one group would deal with fresh and the other with processed sweetpotatoes. The groups pursued the development of four innovations:

- Development of an orange-fleshed sweetpotato crisp product;
- Construction of the kiosk for marketing sweetpotato products in the Kalerwe market;

- Development of two brands of porridge mix employing sweetpotato flour as a main ingredient;
- Establishment of a 'Sweetpotato Marketing Chain Club' to continue to promote innovations after completion of the PMCA exercise.

The sweetpotato crisp product was developed and is being marketed by TomCris Enterprises. The Njukunju Group is now developing another competing product. The kiosk was constructed and used for the first time at the Final Event for Phase 3 of the PMCA. The two brands of porridge developed by the SOSSPA and Kasawo enterprises have been tested in focus groups. Attractive packaging has been developed for these two products. The sweetpotato club has been established but has not yet begun to function as a stakeholder platform.

Vegetable group⁶

A vegetable group was formed because of the growing importance of vegetables in urban diets and Ugandan exports. The vegetable group included participants from two R&D organizations, two farmers' groups (one for hot pepper and the other for tomatoes), six traders, five processors, and six exporters.

During Phase 1, it was decided to focus on two vegetables: hot pepper, which has good export market potential, and tomato, which is grown by large numbers of small farmers. A market chain survey was carried out that included interviews with farmers in the Wakiso district (where large numbers of farmers produce hot peppers and tomatoes), consumers, traders (wholesalers and retailers), processors, exporters, input suppliers, researchers, and other service providers.

The survey showed that most tomatoes are consumed in fresh form within Uganda. Some processed tomato products, including canned tomato sauce and paste, are available in supermarkets. Hot pepper is produced mainly for export and to a lesser extent for the local market. Hot pepper sauce of good quality is produced domestically. Production constraints prioritized by farmers included the lack of good quality seed for hot pepper and the high perishability of tomatoes.

In Phase 2, distinct thematic groups were formed for tomatoes and hot peppers. The tomato group identified market opportunities for four products: high-quality fresh tomatoes, tomato sauce, a tomato chili appetizer (employing both tomatoes and hot pepper), and solar dried tomato rings. The hot pepper group also identified market opportunities for four products: hot

pepper paste, pickled hot peppers, solar dried hot peppers, and a bio-insecticide using hot pepper as a main ingredient.

One of the participants in the vegetable group was John Kavuma, an exporter of hot pepper to Europe and President of the Federation of Associations of Ugandan Exporters (FAUEX). Mr. Kavuma was one of the Ugandans who traveled to Peru and Bolivia with the group, and he was one of the most enthusiastic participants throughout the PMCA exercise. He had read about contract farming in Indonesia and saw its potential value for his business, but had not tried it out, because of his limited contacts in the farming community. According to Mr. Kavuma, the thing that impressed him most about the PMCA was the importance of building *trust*. As he states:

“Here, in general nobody trusts anybody. Marketing is very risky business”.

Based on the trust-building processes he experienced in the vegetable commodity group, Mr. Kavuma decided to *“take the plunge and go for contract farming”*. As one of the production constraints identified by the group was lack of quality seed, he began importing high-quality hot pepper seed from Europe to produce seedlings and distribute them to farmers.

Over the past year, Mr. Kavuma has signed contracts with 85 farmers, whom he has supplied with high-quality hot pepper seedlings. He has also contracted two agronomists who provide the farmers with technical assistance. The contracts require farmers to sell all the hot pepper they produce to Mr. Kavuma, who in turn, exports it to Europe. He deducts the cost of seedlings and technical assistance from the payments to farmers. This institutional innovation has allowed Mr. Kavuma to provide a steady supply of hot pepper to his European buyers and to negotiate more attractive shipping rates with a cargo airline based in Belgium. Both Mr. Kavuma and the growing number of contract farmers are benefiting from this arrangement – one of the first examples of contract farming in Uganda.

During Phase 2, the groups visited two processors, Kasper Food Enterprises, which produces processed tomato products using locally available materials, and Sulma Food Enterprises, which produces hot pepper products. For most participants, this was the first time they had visited a food processor and observed practical aspects of tomato and hot pepper processing. These visits stimulated discussions and prompted the groups to focus their work on processed products. The processors also joined the thematic groups. During Phase 2, one of the members began producing and exporting solar-dried tomato rings (see Photograph 3a).

⁶ Based on a report prepared by Lucy Alguma, Silvester Nganda, and John Kavuma.

During Phase 3, rapid market surveys and discussions with processors led the group to focus on developing four processed products: tomato sauce, chili sauce, hot pepper paste, and pickled hot peppers. Several supermarkets were visited in Kampala to assess the commercial potential of the products and to obtain information on competing products, their packaging and presentation, the volumes marketed and prices. It was found that other hot pepper pastes are being marketed, but no pickled hot pepper was available in supermarkets. Few processed tomato products were found, and it was concluded that for the sauce produced by Kasper Food Enterprises to compete favorably, its quality, packaging, and labeling would need to be improved.

Focus groups were organized to evaluate the quality of the products and their packaging, in relation to other similar products available in local markets. The Kasper tomato sauce scored lowest both in terms of product taste and packaging. In contrast, the Sulma hot pepper paste scored highest in terms of taste and quality, but poorly in terms of packaging. The focus group results pointed the way to product improvements that were needed. Food technologists from Makerere University (Faculty of Food Science and Technology) and the United Nations Industrial Development Organization, and experts from the Ugandan National Bureau of Standards were involved during Phase 3, to assist in improving the quality of the products and to ensure that the products developed would meet local standards required for sale in supermarkets and institutional markets, such as schools. Based on these results, the products have been improved and new prototypes have been developed for market testing.

Factors that have stimulated innovation

During the review workshop conducted in October 2007, PMCA practitioners identified the following factors that were especially important in stimulating innovation in their commodity groups:

- *Stringent demands for quality in new markets.* There are many challenging developments in high-value agricultural markets. For example, supermarkets do not accept products that lack the Ugandan National Bureau of Standards certification and labels with bar codes. Participants feel that these new challenges set the stage for the PMCA and served as important drivers of innovation.
- *Bringing highly motivated, diverse market chain actors together with R&D specialists in facilitated group processes.* Only people who were highly motivated to learn and improve their situation attended the group meetings. Bringing these people together with a common purpose stimulated learning. The involvement of professionals from Makerere University, UNIDO, NARO and other R&D entities brought specialist knowledge to group discussions on issues of food technology, market standards, and post-harvest

technology. The high levels of motivation and diversity of perspectives and knowledge moved innovations forward at key points. Good facilitation was essential to encourage people to think creatively while staying focused on identifying and exploiting market opportunities (in contrast, for example, to discussing production problems). It was also essential for conflict resolution and effective group decision making. Building trust among market chain actors and R&D specialists is crucial for effective communication, collective learning, and joint activities. Early in the PMCA process, farmers and market chain actors were generally wary of each other, and both these groups kept their distance from R&D professionals. Unpleasant exchanges between farmers and market agents were not uncommon. Over time, as members built personal relations, communication and teamwork improved, leading ultimately to the development of innovations.

- *Use of practical training approaches.* In the context of the groups' applied R&D tasks, training on such topics as market concept development, rapid market appraisal, and use of focus groups was essential for the innovation process. The visits of commodity groups to open-air markets, supermarkets, processors' facilities, and research institutes exposed both market chain actors and R&D professionals to situations, activities, and people that were often new to them. This exposure provided participants with new perspectives on the market chain and the possibility of innovation.
- *Use of practical market research approaches that yield quick results.* Engaging participants in practical, hands-on applied research provided them not only with information but critical insights for developing commercial innovations.
- *The final events of each phase in the PMCA.* Participants felt that these events were very useful, to force periodic closure, expose the results to a broad audience, and bring new people with new ideas in to the innovation process (see Photographs 2e and 2f).

RESULTS TO DATE

Applications of the PMCA in Uganda have generated a number of commercial, technological, and institutional innovations (see Photographs 3 and 4). Capacities have also been developed that can effectively support future innovation processes. Both these types of result are important. Tangible, visible innovations that benefit poor farmers as well as other market chain actors – particularly new products – are the ultimate goal of the PMCA. Without them, it would be impossible to make a convincing ‘business case’ to justify future investments of time and financial resources in this approach. In the longer term, however, the capacities to innovate that have been built up – the social capital, knowledge, and skills – are likely to have greater social and economic impacts.

After the discussion of innovations and the capacities developed to date, we note a third type of result – the interest stimulated in the PMCA in Uganda and beyond. Increased interest in the PMCA is beneficial in two ways. At the organizational level, it can translate into senior management support for the PMCA. At the policy level, it can improve the general environment in which the PMCA is applied and improve the likelihood of its success. It is important to note, however, that the current interest in the PMCA can be maintained only if the approach generates tangible innovations and benefits for those involved, and especially for small farmers.

Commercial, technological, and institutional innovations

Experiences with the PMCA in Bolivia and Peru have shown that commercial innovations (i.e., development of new products) can stimulate the use of new production technologies as well as new institutions. Although the experience is still new in Uganda, there are some examples of institutional innovations, such as the closer interaction between Kampala-based potato processors, market agents and farmers in Kabale. It is still early to see the effects on technological innovation. The engagement of research organizations such as NARO will be required for impact-oriented research that responds to the technological demands that emerge from producers as they face more stringent market requirements for both quality and quantity of agricultural products.



3a. Vegetable Group innovation: sun dried tomato ring.



3b. Potato Group innovation: 'TomCris' potato crisps.



3c. Miller with the new package for her sweetpotato enriched flour.

Photograph 3. Innovations developed during the PMCA process.



3d. Sweetpotato varieties exhibited in front of the sweetpotato stall at the Big Final Event.

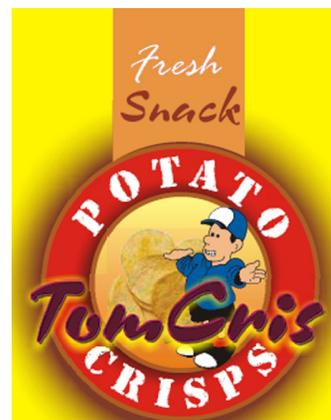
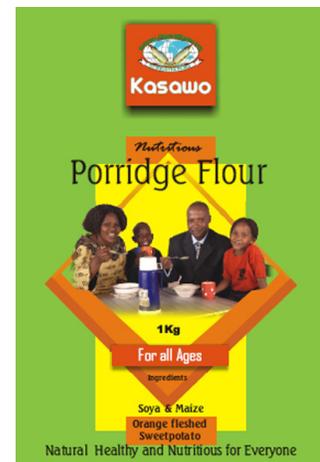
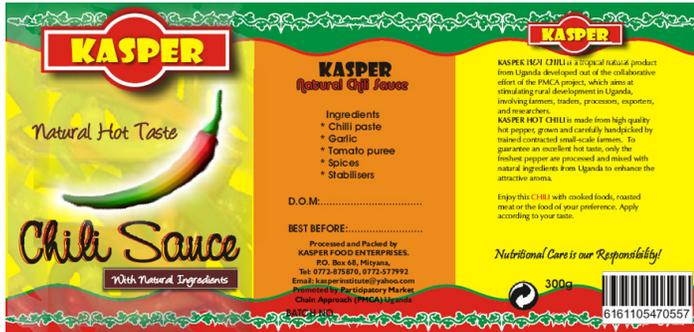


3e. Vegetable Group innovation: Tomato chili appetizer.



3f. Vegetable Group innovation: Fresh hot pepper for export.

Photograph 4. Product labels of commercial innovations developed through the PMCA.



The commodity groups have developed innovations that are at various stages of development and application (Exhibit 4). The main innovation developed by the potato commodity group has been improved packaging and labeling of a potato chip (crisp) product (see Photograph 3b). Focus groups indicated that the quality of the product was excellent, even compared to imported potato chips, so efforts focused on improving the plastic packaging and labeling, which consumers considered inferior. The new packaging is now in use, and sales of this product are increasing. The producer, TomCris Enterprises, feels that the main constraint to increasing the volume and quality of production now is the lack of a dependable supply of fresh potatoes for processing. Consequently, the potato commodity group is organizing a meeting of potato processors, market agents and farmers in Kabale, Uganda's main potato producing area, to explore ways to improve the supply of potatoes to Kampala-based processors. This illustrates how commercial innovation can stimulate the search for technological and institutional solutions to subsequent production bottlenecks.

The sweetpotato group has worked on a number of innovations, which are at various stages of development and use. A new snack food product based on orange-fleshed sweetpotatoes has been developed, and the producer (TomCris) has received many requests for this product. However, production is constrained by the limited supply of orange-fleshed sweetpotatoes in Kampala. The processor and NARO are now exploring means to increase the supply of fresh sweetpotatoes for processing. Again, this illustrates how a commercial innovation can drive subsequent technological and institutional innovation. A new variety of sweetpotatoes, known as *Naspot 1*, is being produced and marketed in Kampala's largest supermarket, Uchumi. Composite flours containing orange-fleshed sweetpotatoes have been developed and pilot-marketed by two Ugandan processing firms, SOSSPA and Kasawo (see Photograph 3c). However, their production is also constrained by the limited supply of orange-fleshed sweetpotatoes. A kiosk for marketing clean, sorted, and graded sweetpotatoes and processed sweet-potato products has been constructed and used for the first time at the Final Meeting of the PMCA, in September 2007 (see Photograph 3d). A 'Sweetpotato Market Chain Club,' with representatives from all segments of the market chain, has been established.

Exhibit 4.
Innovations
developed
through use of
the PMCA

Innovation	Type	Status
Potato group		
Improved packaging and branding of one Ugandan potato crisp product ('TomCris')	Commercial	In market
Sealing machine for packaging	Technological	In use
Sweetpotato group		
New OFSP crisp ('TomCris')	Commercial	In market
New variety (Naspot1) marketed in Uchumi supermarket and exported	Commercial	In market
Marketing concept for composite flour with OFSP: two brands (SOSSPA and Kasawo)	Commercial	Being introduced
Improved package for Kasawo OFSP composite flour	Commercial	In use
Marketing stall / kiosk for selling clean, sorted, and graded sweetpotatoes in Kalerwe market	Commercial	Being introduced
Sweetpotato Market Chain Club, representing all market segments	Institutional	Formative stage
Vegetable group		
Contract farming of hot pepper	Institutional	In use
Tomato sauce	Commercial	Prototype
Tomato chili appetizer	Commercial	Prototype
Hot pepper paste	Commercial	Prototype
Pickled hot peppers	Commercial	Prototype

The vegetable group has improved the quality, packaging, and labeling of a tomato paste product that has an established market. The group has also developed three new products – a tomato chili appetizer, hot pepper paste and pickled hot peppers – all of which are being market tested. Motivated by his participation in the commodity group, an influential Ugandan exporter has established a system of contract farming for hot pepper (see Photographs 3e and 3f).

Development of capacity to innovate

Capacities to innovate in agricultural commodity chains have been developed in two main areas: formation of social capital and strengthening the knowledge, skills and attitudes of participants.

Formation of social capital

Social capital includes *“features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit”* (Putnam, 1995: 67). There are two related but distinct forms of social capital:

- Norms, values, attitudes and beliefs that predispose people towards cooperation (for example, norms of trust and reciprocity);
- Social networks and clear rules and procedures for decision-making, resource mobilization, communication, and conflict resolution. These make it easier for people to engage in mutually beneficial collective action, by lowering transactions costs and facilitating social learning (Uphoff and Wijayaratra, 2000).

Application of the PMCA in Uganda has contributed to the development of these forms of social capital, by expanding contacts and strengthening relationships, trust and social networks. Participants frequently note that working with the PMCA has given market chain actors many new and useful contacts, in some cases leading to new business deals. New contacts and collaboration are also reported among different R&D organizations, which had previously never worked together. In many cases, researchers, farmers, local traders, processors, and exporters came together for the first time during PMCA exercises.

In many of the early commodity group meetings, farmers and traders treated each other with suspicion and each group accused the other of bad dealings in the past. Over time, group members generally gained respect for others, as useful information was exchanged and trust was built up. Communication became more open and fluid and collaboration became possible. Trust building has been a key feature and result of the PMCA, mentioned frequently by participants.

“The key value of the PMCA has been the emphasis on trust building.

That is very much lacking here. No one trusts anyone else...”

John Kavuma, President FAUEX

“When you trust each other you can work together and more importantly, you can learn together.

One of the key aspects of the PMCA is that it builds that kind of relationships.”

Dan Kisauzi, Director, Capacity Strengthening and Eastern Africa, Research into Use Programme (RIUP)

Notwithstanding the significant progress made, it is important to note that there has been more progress in changing individuals' attitudes and beliefs concerning collective action than in establishing mechanisms for continuing group action and sustainable stakeholder platforms.

Contributions to knowledge, skills, attitudes, and empowerment

Knowledge

As a result of participating in the PMCA project, participants report many changes in knowledge, attitudes, and skills. Core team members state that they have acquired useful knowledge on the PMCA itself, as a way of promoting market-led innovation. They also mention the usefulness of specific concepts and tools associated with the PMCA – for example, facilitation skills, rapid market assessments, key informant interviewing, and focus groups. Some team members have applied these concepts and methods in other settings. For example, one facilitator has used the PMCA in consultancies with the Danish International Development Agency (DANIDA).

Core team members generally state that the PMCA offered them a more effective approach for linking farmers to markets and for fostering market-driven innovation than other approaches with which they are familiar. Beyond the core team members, participants in general report that they have gained useful information and personal knowledge on a range of topics including: Ugandan R&D organizations, the sectors and market chains they were working on, production and post-harvest technologies, market concepts, and innovation processes.

One of the key reasons that people participated in the commodity group meetings was that they felt they gained useful knowledge during the meetings that they could use in their work. Farmers reported obtaining useful information from other producers or R&D workers for dealing with production or marketing problems – not only on the commodities being dealt with by the group, but also for other crops and livestock activities. An extension agent/trainer reported the following benefits:

“Whenever I came to these meetings, I got new ideas, knowledge, and approaches, and when I went to the field people wondered where I got them. They thought I’d been abroad! ... I keep on combining whatever I learn here and there, and now when I talk about marketing and innovations, people think I’m knowledgeable.... I also learned so many useful new ways to present things to groups...

In the meetings, farmers would pick my brains too. They get little support, in the field, so people are eager to ask about pests and diseases and how to control them.”

Sylvester Nganda, Uganda National Farmers Federation (UNFFE)

Skills

One of the aspects that participants like most about the PMCA is that it is very practical, and they learn new and useful skills. Core team members commonly state that working with the PMCA has given them more confidence in dealing with a range of market chain actors, with whom they

previously had little or no contact. The team leaders have clearly strengthened their ability to manage complex group processes, and boosted their self-confidence and leadership skills.

Specific skills acquired during the work include those for communicating effectively with people from diverse backgrounds, delivering presentations to large audiences, participating effectively in teams, facilitating consensus building and decision making in groups, conducting rapid market assessments, organizing focus groups for market research, and using information from market research to develop marketing concepts and prototypes. As a reflection of their skill development and recognized performance, several of the core team leaders have moved into new positions of greater responsibility in their organizations or elsewhere.

Attitudes

The PMCA represents a radical departure from the way R&D is usually carried out, and working with it has engendered some rather profound changes in participants' assumptions, beliefs, and attitudes concerning ways to bring about change. As noted in the section on strategies for introducing the PMCA, the study tour to the Andes stimulated many to re-assess their assumptions about how development interventions should be designed and implemented. This is reflected in the following statements:

"The use of visiting Bolivia was seeing things like we see here, but having success in the market. Previously, we were always thinking we needed new crops to get ahead. But in Bolivia we saw that we could make a difference with what we had... We also found out the importance of the middleman. Here we've always said that if we eliminate the middleman the farmer will be rich. But we began to see things differently in Bolivia."

Peter Lusembo, Director, Mukono ZARDI

"What was useful for me was to see that a farmer can sit and talk with a trader and come up with something useful for both of them. That was really an eye opener for me."

Beatrice Akello, Researcher, Mukono ZARDI

Something similar occurred as a result of group visits to various segments of the market chain and to R&D facilities in Uganda, which were new to many participants. Working in commodity groups that produced tangible results also changed the way that many participants view the role of collective action in innovation. For example, farmers who visited processors were able to understand the importance of grading and standardizing products, after seeing the losses that processors suffered from procuring adulterated or poor-quality products. Processors, on the other hand, gained better insights into the challenges farmers face in bulking and consolidating

produce, especially where particular varieties were required, as is the case for potato crisps. As a result of the visits and interaction, farmers and processors decided to come up with strategies to overcome these marketing problems, with the assistance of researchers, NGOs and other market players.

Empowerment

Participants in the PMCA exercise frequently mention feeling empowered by the experience. It was often noted that farmers and small-scale traders and processors gained self-confidence and became more assertive during the process. At the outset, they could not imagine sitting at a table with researchers or important market agents, discussing their ideas or concerns, and having their views respected. By the end of the process, many of these individuals had developed a voice and expected to be heard. Some examples include:

- Many participants, including R&D workers, mention new abilities to speak and address the public. This has been especially important for farmers and market chain actors who previously could not do so.
- Many also mention the ability to scan the market for opportunities and take advantage of them. For example, TomCris Enterprises recently applied for and was awarded sponsorship by the Ugandan government to participate in an agricultural marketing exhibition in Nairobi, Kenya. Kasawo Millers sought bar codes to enable their products to be marketed in large supermarkets. Prior to their participation in the PMCA work, these processors would not have taken such initiatives.
- As a result of contacts made in the platforms, many market chain actors can now access services which they could not in the past (for example, research and market information).

Growing interest in the PMCA

On the basis of the results obtained to date, high-level spokesmen in the public and private sectors and in NGOs have expressed strong interest in the PMCA. This is reflected in the following statements:

“Congratulations for a job well done. One can see that you have developed new products, so the process has clearly been a good one. The partnerships that have been established seem to be real ones that have created a productive environment. I’m interested. I want advice. What can we do to maintain this and to take on a few more commodities? It doesn’t make sense after two years to stop everything now. How to market the new products? How to bring in new ones? How to move forward?”

Peter Ngategize, National Coordinator, Competitiveness and Investment Climate Strategy
Secretariat, Ministry of Finance, Planning and Economic Development

“DFID has realized that it’s not enough to fund research. It’s necessary to develop new ways of working... The PMCA provides a structure for innovation and builds trust and good relationships, which are essential for working together and learning together.”

Dan Kisauzi, Director, Capacity Strengthening and Eastern Africa, RIUP

“The PMCA has demonstrated that with a small amount of money, you can get many people along the market chain to work together to generate ideas that will benefit all.”

James Ssemwanga, Ssemwanga Group

“We’ve been telling government that we need R&D to work together with the private sector. Thanks to the PMCA, we’ve built a platform for R&D where we can get answers to our questions and needs. I always tell my colleagues that when they have a problem they should tell me, and I know where to go for the solution – to the PMCA fraternity.”

John Kavuma, President FAUEX

“This is our core business. All the commodities at NARO should have a PMCA component. We are beginning with sweetpotato but plan to use this approach for all the market chains we work on in the future.”

Peter Lusembo, Director, Mukono ZARDI

Whether this interest in the PMCA can be translated into its effective use in market chain innovation is the subject of the next section.

PROSPECTS FOR THE FUTURE

As noted in the previous section, the work with the PMCA in Uganda has stimulated considerable interest in this approach in R&D organizations and policy circles. This section discusses the prospects for sustained use of the PMCA, for scaling up use of the approach in Uganda, and for using the PMCA in other countries of the region.

Prospects for future use of the PMCA in Uganda

Continued work with potatoes, sweetpotatoes, and vegetables

Several innovations produced by the three commodity groups working with the PMCA in Uganda were formally launched in the Final Event for Phase 3, in September 2007. Some of these innovations – for example, the new packaging and labeling of potato crisps – have achieved the status of mainstream practical application. Others, including the new tomato, hot pepper, and sweetpotato products, are still in the prototype stage, and their commercial viability is yet to be demonstrated. These products need further market testing, and likely improvements in some aspects of their production, packaging, or labeling. With this in mind, four priorities emerge:

1. Follow-up with specific innovators, to ensure that the new products are adequately refined and move into commercial production;
2. Review the status of the innovations in six to nine months;
3. Assist the existing commodity groups to establish sustainable multi-stakeholder platforms that can support innovation in their respective commodity chains;
4. Strengthen links between the incipient market innovations and technological innovation, to improve farmers' ability to respond to market demands.

The main issue is how to organize such activities, provide leadership, and marshal the necessary resources. Mukono has committed itself to institutionalizing the PMCA in its own operations, and it has included the PMCA in its work plans and budgets for sweetpotato R&D for the coming two years. Similarly, the CICS Secretariat has committed itself to continuing support for innovation with tomato and hot pepper.

The groups have not developed work plans for activities after Phase 3. To motivate and assist them, it is essential that one or more Ugandan organizations take the lead to ensure follow-up during the coming six to twelve months. Some external resources may be required, but future work should involve cost sharing, with local organizations (public, private or non-governmental) providing leadership and an increasing proportion of the resources needed over time. A planning meeting would be useful to prepare work plans and budgets for the follow-up activities of the

three commodity groups and to assess how to sustain innovation processes beyond Phase 3 in different contexts.

Prospects for use of the PMCA with other commodities

Through its work with the PMCA in the potato, sweetpotato, and vegetable commodity chains, Uganda has built up an enviable capacity to promote market-chain innovation, which can now be applied to other commodities. There is strong interest in applying the PMCA to other commodities in Uganda. Mukono has committed itself to institutionalizing the PMCA in its operations, in all the commodities it works on. The CICS Secretariat has also committed itself to initiating PMCA work with two additional high-value crops with export potential.

Based on experiences with the PMCA in Uganda and with collective action more broadly (Devaux et al., 2007), the following factors are likely to increase the prospects for success with the PMCA:

- Existence of a R&D organization committed to leading the PMCA process, to mainstreaming the PMCA in its own operations, and with the resources to do so;
- Professionals with experience in facilitation and innovation processes, who are committed to leading the commodity group;
- A commodity chain with high transactions costs that could potentially be reduced through collective action;
- Capable leadership within the chain;
- Potential for product differentiation and value addition;
- Positive experience with collective action among at least some of the potential participants.

In light of the successes with the PMCA with Andean native potatoes, it could also be useful to explore its application with indigenous African crops.

Developing sustainable multi-stakeholder platforms to support innovation is a complex and challenging task that will require attention to be directed at the following areas:

- Leadership and facilitation of group processes;
- Strengthening of farmers' organizations;
- Development of social learning processes that lead to effective group decision-making and development of social capital and leadership capacity;
- Development of mechanisms that ensure fair allocation of the costs and benefits of collective action;

- Development of rules that are simple, easy to understand and enforce, and consistent with market signals.

A national 'umbrella PMCA group' could play a useful role by promoting the sharing of knowledge and experiences among professionals in the different groups working with the PMCA, providing technical backstopping for the individual groups, and giving the PMCA more visibility and access to national policy discussions.

Prospects for future use of the PMCA in other countries

Based on this assessment of the Ugandan experience with the PMCA, it is likely that PMCA could be a useful approach for stimulating market chain innovation in other countries of Sub-Saharan Africa. Now that the approach has been field tested and capacity has been developed for using it in Uganda, it would be easier and more economical to introduce the PMCA into other countries. Experienced Ugandan PMCA facilitators could support its introduction. The same factors that were identified as influencing the likelihood of success with the PMCA in Uganda apply to other countries. Among these factors, perhaps the most critical is the presence of a R&D organization that is committed to leading the PMCA process and to mainstreaming the PMCA in its own operations.

In introducing the PMCA to new settings, it needs to be kept in mind that each situation has a unique combination of socio-economic, political, institutional and technological conditions, and that the approach will need to be customized for each country and market chain. Issues of appropriateness of the approach and institutional sustainability should be dealt with as priorities from the outset of the introduction process. As the PMCA is a new and highly novel R&D approach that is still being tested and refined, CIP could play a useful role in expanding its future use and impacts by supporting local capacity development and by working with local groups to learn from their experiences. This will allow continued development and improvement of both the approach itself and the means to introduce it into new settings and apply it to new commodity chains.

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The International Potato Center (CIP) seeks to reduce poverty and achieve food security on a sustained basis in developing countries through scientific research and related activities on potato, sweetpotato, and other root and tuber crops, and on the improved management of natural resources in the Andes and other mountain areas.

THE CIP VISION

The International Potato Center (CIP) will contribute to reducing poverty and hunger; improving human health; developing resilient, sustainable rural and urban livelihood systems; and improving access to the benefits of new and appropriate knowledge and technologies. CIP, a World Center, will address these challenges by convening and conducting research and supporting partnerships on root and tuber crops and on natural resources management in mountain systems and other less-favored areas where CIP can contribute to the achievement of healthy and sustainable human development.

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