

**Market Information and
Community-based Marketing as
a solution to the Producer price
volatility:
A Case of Rwandan Small Scale
Potato farmers in Musanze**

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Introduction and Motivation

- Marketing agricultural produce involves many agents. These include farmers who produce and sell agricultural produce and traders who include retailers, intermediaries (middlemen) semi-wholesalers, wholesalers and transporters (Aker, 2010).
- The role of middlemen in the agricultural sector is not new in Africa. This is especially so given the fact that the agricultural sector in Africa is dominated by small scale producers in which case middlemen are appraised for their intermediary role where they act as a link between the farmer and the customer of agricultural produce (Oguoma, Nkwocha and. Ibeawuchi, 2010).

Cont

- One reason that makes the role of middlemen popular in agricultural markets is that there is numerous market information asymmetry on the side of the farmer as well as high transportation costs.
- Although middlemen aid the movement of agricultural commodities, they are seen to distort the market for agricultural produce because they mark-up prices to cover for transport and storage costs in addition to their profits which make the customer prices very high which are hardly passed on to farmers with the middlemen getting the lion's share of the produce.

Cont

- One of the ways that has been traditionally used to cushion farmers from such risks is farmer cooperatives and producer organizations.
- They offer the farmers services such as information, communication, input and output markets, technologies and training and also facilitate their participation in decision making-processes (FAO, 2012)
- They also facilitate group purchasing and marketing, which enable farmers to gain market power and get better prices on agricultural inputs and other necessities.

Cont

- Rwanda is one of the most densely populated countries in Africa and depends highly on agriculture to feed its population like many other African countries. In 2011, the ministry of Agriculture in collaboration with the World Bank initiated an ICT platform E-Soko to address the market information asymmetry problem among farmers.
- The reasoning behind the E-soko concept is that farmers are able to bargain for better prices for their produce if they were aware of market prices for their goods.
- However, the transport costs that middlemen use to mark-up prices is not known to farmers and this leaves the farmer vulnerable to exploitation.
- Therefore, for most of these rural farmers being aware of the market prices may not be empowering enough given that transport costs are equally prohibitive.
- To successfully cushion farmers against the exploitative middlemen, an alternative mode of transport is essential.

UBUDEHE concept

- The government of Rwanda has long embraced the concept of community empowerment for both economic and social outcomes. The practice of Umuganda which is a mandatory state-led public service program (Straus, 2006) dates back to 1974 where citizens were encouraged to promote agricultural production and promote the welfare of the community above their own welfare (Verwimp, 2003)
- The Ubudehe Program is a Rwandan social protection system of intra-community cooperation based on collective and individual actions (Niringiye and Ayebale, 2012) It was launched in 2001 and empowers people to discuss the characteristics of poverty and their role in poverty reduction (RGB, 2013).
- The program promotes a culture of mutual assistance and conviviality whereby people come together to address problems facing them so as to work for their development. The Ubudehe approach has been used to improve access to finance especially in the rural areas.

This study

- This study proposes to apply the concept of community based marketing build on the Ubudehe concept to improve the producer prices of potato farmers in Rwanda.
- This approach is envisioned as a way to cushion farmers against marketing risks by encouraging them to form producer organizations at the cell level championed by the existing community leaders. Market information will then be channeled through the community leaders and the community will decide to either to collectively bargain for better prices with the middlemen or organize for direct delivery to markets through community organized transport.

Objectives

This study will be implemented in stages where the first part of the study which is the subject of this proposal will have the following specific objectives

1. To identify the characteristics of the potato farmers in Musanze District
2. To assess the marketing channels available to the farmers
3. To identify the potatoes middlemen networks in Musanze district
4. To examine the producer prices faced by farmers in Musanze
5. To investigate the destination markets for potatoes and the market prices thereof
6. To assess the degree of market information asymmetry among the farmers
7. To do a pilot experiment on how community leaders disseminate market information delivered to them to their community members. This will be compared to how farmers respond to market information delivered directly to them on mobile phones which is one of the ways E-soko is implemented. The third comparison group will be the farmers who get no information at all.

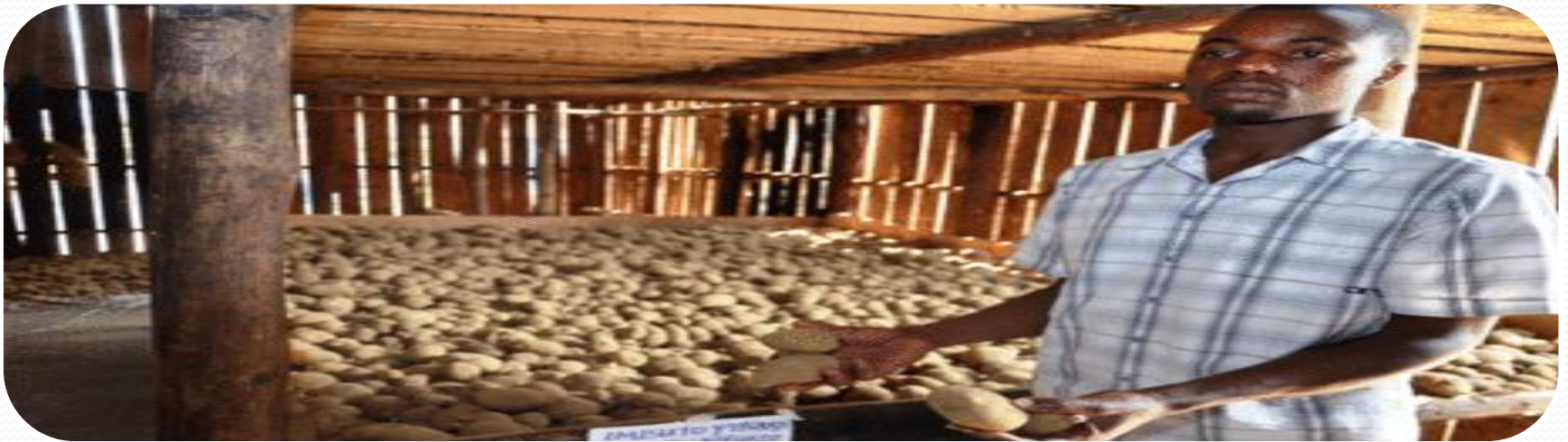
LITERATURE REVIEW

- Research on the role of middlemen on agricultural price volatility has been ongoing but with mixed results. While some authors argue for the positive role of middlemen in agricultural marketing (see Li, 1996 and Johri and Leach, 2000); others have concentrated on how middlemen reduce farmers' welfare (see Masters, 2004).
- Fafchamps and Hill (2005) associated the emergence of middlemen in agricultural markets to the poor communication channels. These middlemen are known to offer very low farm-gate prices to farmers while they reap very high profits thus distorting agricultural markets and in turn reducing the welfare of farmers.
- The debate on how reducing market information asymmetry would be of benefit to farmers is ongoing. However, even when farmers have the information, the challenge remains because of high transport costs and middlemen who act as a cartel such that the farmer is left with little choice than to sell to the middlemen or lose his produce. Community based marketing could be seen as a good middleman who looks out for the welfare of members. This coupled with market information offers the farmer a choice between the bad and good middleman as outlined by Mitchell (2011)

In Rwanda

- Muhinyuza et. al (2012) did a study on potato farmers but concentrated on production constraints
- On July 11th, 2013, Minister Kalibata visited the farmers of Musanze to give them advice and guidance on how to improve potato harvests by increasing their level of seeds.
- Farmer groups were encouraged as a means to achieve this “...effort in grouping farmers together based on the stage of their seeds,”
- According to the minister, farmers must use seeds from allowed multipliers and different kinds of fertilizers for reducing diseases in potatoes. Farmers should not be allowed to use seeds from their own harvests to avoid and control diseases. In 2010, potato farmers were producing about 16 to 18 tons per hectare, when the target is 40 tons per hectare.

In the bans



- How do we move from here to the market???
- What are the available channels and at what cost???
- This is the big question.

Community Development Policy

- The Community Development Policy was adopted by the Cabinet of the Government of Rwanda (GoR) in March 2001 with the overarching goal of “ensuring effective and sustainable participation of the community in its own development, in order to achieve poverty reduction and self-reliance based on the sustainable exploitation of available resources
- The administrative reform of 2005 established Umudugudu as the basic administrative level to enhance community mobilisation and data collection, while some of the services formerly delivered at District level were decentralised to the Sector (Umurenge) level.
- Evolution of the Ubudehe process: Community Development is anchored on the Ubudehe process During the first phase of decentralization, the Ubudehe process operated at Cell level. It has now moved to the Umudugudu level

About Musanze

- Musanze (formally Ruhengeri) district is divided into 15 sectors (*imirenge*) and 68 cells.
- Cells are the second level administrative subdivision in Rwanda
- This entire administrative structure is undergoing a process of decentralisation -- devolving greater authority to local governments and municipalities
- The smallest level is the Umudugudu

METHODOLOGY

- Following Mitchell (2011), this study defines middlemen heterogeneity by having the farm gate trader as the Type A middleman whose aim is to maximize his gain and Type B middleman who is a Community based marketer (producer organization) who seeks to maximize the corrective gain of all its members.
- Type B middleman seeks to cushion the farmers against the high transport costs they face as individuals as well as the exploitation from Type A middleman.
- Market information which includes the commodity market price at various urban markets as well as the average transport costs to each of the markets is provided to all farmers on daily basis through mobile phone. The same information is given to the community leader.

METHODOLOGY

- The farmer has three choices to make. The first choice is to go to the market himself, face the transport costs and get the highest price in the market.
- The second choice is to sell their produce directly through Type A middleman at a lower price but face zero transport cost.
- The third choice is to join the producer organization where the community leader leads the members to do collective bargaining with the middlemen or even deliver the commodities directly to the market. This is the Type B middleman.
- The farmer who takes this choice faces a price between the market price and that of Type A middleman and face a small membership which is renewable every period.

METHODOLOGY

- Every period the farmer has a choice to either remain with the previous period's middleman or switch to another middleman. The transaction cost of switching from Type A middleman to Type B middleman is the membership fees while that of switching from Type B middleman to Type A middleman is the reduced price. The farmer's choice of a middleman depends on whether the expected returns of his choice is greater than the farmer going to the market
- However, the study deviates from Mitchell (2011) and applies a randomized control experimental design in which the farmers are randomly assigned to the treatment group and control group. The treatment group is given market information through the mobile phone and allowed to make a choice between Type A middleman and Type B middleman. Both types of middlemen are allowed to negotiate with the farmer.

Modeling

- The study then estimates the difference between P_{ii} which is the producer price when the farmer receives market information and P_{i0} the price when the farmer does not receive market information. The study seeks to measure the average treatment effects where
- $E(P_{i/d=1}) - E(P_{i/d=0}) \dots \dots \dots (1)$
- To estimate the treatment effect, a regression model is specified as
- $P_i = \gamma + \alpha d_i + \varepsilon_i \dots \dots \dots (2)$
- Where the price faced by farmers is a function of the market information which makes the farmer bargain for better prices and make informed choices about which middleman to engage, whether Type A or Type B middleman

SAMPLING AND DATA COLLECTION

- Although the number of households is known 70,830 in 68 cells, the number of potato farmers in Musanze is not documented so the researcher will begin by listing all the farmers involved in potato farming in order to establish the target population. Listing will also provide information of the spread of the population.
- Given that the Ubudehe approach is implemented at the umudugudu level, clustering will be done at the umudugudu level
- Multi-stage cluster sampling will be used at the umudugudu level
- For objective 1 to 6, a systematic random sample will be selected from the target population after listing (and clustering). This will be useful to correct data on the general characteristics of the farmers and the market information available to them. A semi-structured questionnaire will be used to correct this data.
- Interviews with community leaders will also be conducted
- For objective 3 and 6, focus groups will be used in selected cells

SAMPLING AND DATA COLLECTION

- For objective number 7 which is a pilot experiment, the concept of village community groups called *Umudugundu* which is very popular in Rwanda will be used in the randomization process.
- Cluster sampling technique at the *Umudugundu* level will be used to choose the respondents in order to ensure external validity and avoid spillovers which in this case would be the major threat to internal validity. However, since farms are owned by households, the unit of analysis will be the household where the household heads will be the household heads. For every *Umudugundu* chosen all the potato farmers will be respondents.
- The information on individual characteristics will be useful in running the balance tests between the treatment and control groups to ascertain if randomization was effective.
- The estimated sample size for randomization is calculated using STATA where an expected change of 15% in the potato prices based on USAID, (2002) estimates with 0.05 precision level and 90% level of confidence which yields $n_1 = 85$ which is the sample in the treatment group and $n_2 = 85$ the sample in the control group

Theory of Change

Need	Logical Framework				
	Inputs	Output	Intermediate Result	Strategic Objective	Goal
To reduce price disparity for potato farmers in Ruhengeri	Provide Price information to individual farmers and to community based producer organizations	Farmers get price information and use it to chose their marketing channels Community based Producer organizations help farmers to get better prices	Farmers use that information to choose the marketing channels	Potato farmers get better prices for their produce	Farmers welfare is enhanced

Deliverables

- Questionnaire and interview guides
- Comprehensive data on potato farmers in Musanze
- Preliminary report on the pilot experiment

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THANK YOU VERY MUCH