Identifying Problems Facing Smallholder South African Farmers through Participatory Rural Appraisals --Case Studies with Smallholder Farmers

Xiaorong Shao
Ph.D. Candidate
Ag and Extension Education Department
415 Agricultural Administration Building
Penn State University
University Park, PA, 16802
xzs100@psu.edu

Vladimir Konovalchuk
Ph.D. Candidate
Ag Economics and Rural Sociology Department
Penn State University
University Park, PA, 16802
Vvk104@psu.edu

Brian Clark
Graduate Student
Crop and Soil Science Department
Penn State University
University Park, PA, 16802
bje159@psu.edu

Thomas Bruening
Associate Professor
Ag and Extension Education Department
335 Agricultural Administration Building
Penn State University
University Park, PA, 16802
Tbruening@psu.edu

Abstract

Smallholder farming is a growing agricultural phenomenon in rural communities in South Africa. However, these smallholder farmers have encountered many problems and constraints in their farming operations. The problems were partially caused by the apartheid policies implemented in the past. During the country’s democratization since 1994, government and foreign aid organizations have started making efforts to help smallholder agriculture. A research team mixed with people from both the United States and South Africa employed Participatory Rural Appraisal (PRA) methods to identify the problems facing South African smallholder farmers. PRA is considered as a bottom-up approach that helps local communities to identify the problems and work out solutions to their problems with minimum influence from outsiders. The purpose of this paper is to describe the characteristics of smallholder farmers and their farming activities in Limpopo province of South Africa. The problems facing the smallholder farmers are identified and strategies for resolving problems are also discussed in the paper. The data collected during the PRA process revealed that the majority of smallholder farmers were black females with low education levels and each householder owned several small plots of land. Most of them grew vegetables and on gardening projects subsidized either by the government or international agencies. The top two programs facing smallholder agriculture were inadequate technical information to support farming and lack of formal market and transportation infrastructure for agricultural products. Therefore, it is critical for government to address these problems and help the development of smallholder agriculture during transition.
Introduction/Background

South Africa has been characterized by high levels of poverty, especially in rural areas where approximately 70 percent of South Africa's poor people reside. These people’s incomes are constrained because the rural economy is not sufficiently vibrant to provide them with well paying jobs or self-employment opportunities (National Department of Agriculture, 2002). There are many reasons for the problems, but most of the causes are deeply rooted in apartheid policies implemented in the past.

Primarily, agricultural production in South Africa has been dominated by commercial farms. There are approximately 50,000 large-scale commercial farmers in south Africa who are predominantly drawn from the white population. They employ about 1 million workers, which is 11 percent of total formal sector employment in the country (National Department of Agriculture, 2002). Many of these workers live on commercial farms and their children receive education in farm schools. These commercial farms provide livelihoods and housing to about 6 million family members of these 1 million employees and provided for their education needs.

There are also 240,000 small farmers who provide a livelihood to more than 1 million family members, and occasional employment to another 50,000 large-scale commercial farmers people. These farmers supply local and regional markets where large numbers of informal traders make a living. Furthermore, an estimated 3 million household farmers are located mainly in the communal areas of the former homelands. These farmers produce food for sustenance and to meet part of their family’s total needs. Most importantly, almost all the productive and social activities of rural towns and service centers are dependent on agriculture and related activities (National Department of Agriculture, 2002).

Prior to 1994, rural development policies in South Africa were primarily to assist white commercial farmers while continuing the exploitation of black workers living in the homelands. With the first South African democratic elected government in place since 1994, a shift has occurred in rural development policies as assistance programs have emerged to help the black labor force (Binns, Hill & Nel, 1997). However, as a result of years of top-down decision making by the apartheid government, many rural black populations feel disempowered, lack self-expression, and are not used to having people listen to them (Binns, et al. 1997). Chambers (1993) argued that the use of Participatory Rural Appraisals (PRA) techniques as a bottom-up approach allows for rural black populations to develop an understanding that outside researchers have a desire to help with development projects. The role of the researcher in the PRA process becomes that of a listener, learner, catalyst, and facilitator, the indigenous individuals are encouraged to identify and develop their own needs and goals.

In addition, the use of PRA as a bottom-up approach has shown to be an effective tool compared with top-down approaches used to assist in rural development programs. In PRA’s, rural development teams work with community members in active roles to identify local needs. Successful development initiatives need to include techniques and approaches that the community can manage and utilize after the development team has departed (National Environment Secretariat, Egerton University, Clark University & World Resource, 1991).

Binns, Hill, and Nel (1997) demonstrated the effectiveness of a PRA in the Eastern Cape Province of Hertzog in South Africa, where a community began a project to develop an agricultural cooperative in 1994 without the assistance of outside help. The insights gained about community dynamics, decision-making and the development processes through PRA
helped the community identify their pressing problems. The PRA approach has also been used to investigate the development of local markets in the northern Free State (Roos & Mohatle 1998).

Joubert and Hart (2002) reported that in September 1999, researchers from the Agricultural Research Council in South Africa tried to establish a honeybush demonstration plot in Friemersheim with the local smallholder farmers, but failed. During 2000, the researchers used PRA techniques to identify problems in the community with some of farmers in the community and found out a major problem that might be responsible for the failure of the project that they did not realize before.

**Purposes and Objectives**

The purpose of this paper is to describe the characteristics of smallholder farmers and their farming activities in selected communities in Limpopo province of South Africa. The problems facing the smallholder farmers are identified and strategies for resolving problems are also discussed in the paper. The objectives are to

1. describe the profile of South African smallholder farmers;
2. describe farming activities that smallholder farmers engaged in;
3. identify the problems facing the smallholder farmers; and
4. discuss the possible solutions to the problems facing smallholder farmers.

**Methodology and Procedures**

Participatory Rural Appraisal is a systematic, yet semi-structured activity carried out in the field by a multidisciplinary team and designed to acquire information regarding rural development. The method emphasizes local knowledge and enables local people to make their own appraisal, analysis, and plans. PRA uses group animation and exercise to facilitate information sharing, analysis, and action among stakeholders (National Environment Secretariat, Egerton University, Clark University & World Resource, 1991).

There are five key principles that form the basis of any PRA activity: participation, flexibility, teamwork, optimal ignorance, and systematic. Some common tools involved in the process are semi-structured interviewing, focus group discussion, preference ranking, and mapping, and modeling (The World Bank Group, 2002).

Due to resource limitations, a modified PRA was employed to collect data in Limpopo province. The PRA team worked closely with agricultural university, extension agents, and community leaders during the entire process. Questionnaires used for the interviews were developed with the aid of several extension professionals from Limpopo province and graduate students from the University of the North. The questionnaire included general questions regarding farmers’ social status, farm operation, and questions about product marketing, infrastructure and extension services. In addition, historical data, field cropping patterns, trend lines, and time lines were collected.

Eleven graduate students from Penn State University and the University of the North collected the data. The team was taught the PRA process through a systematic step-by-step instruction to reduce collection errors. In four sites, local extension agents and social workers were also present to facilitate the process. Field visits using the PRA approach focused on interviewing farmers as well as analyzing other data such as farm sketches, trend lines, and time lines in the communities. Four sites (Sepitsi, Wonderboom, Apel and Dikgale) were
selected for conducting this modified PRA process in Limpopo province. Interviewees included 53 farmers, ten extension and social service agents. All the interviews and secondary data collections were conducted in the field. The majority of farmers interviewed were working on gardening irrigation scheme projects sponsored either by the government or foreign agencies.

After the field visits, a nominal group process was conducted to determine key problems that communities faced. The nominal group activities took place at the University of the North in South Africa.

**Results/Findings**

The data collected during PRA process are presented in two parts: one is in case studies from four sites visited, and another is the summary of all findings from the interviews with farmers and agents. Trend lines, farmer sketch, and historical data collected during the trip are not reported in the paper.

**Case studies**

The following case studies are descriptions of four typical female farmers, one from each of four sites visited during the PRA process. These case studies intend to provide insights on the challenges faced by the South African smallholder farmers as they attempted to make the transition to production agriculture.

**A tomato farm in Sepitsi**

Irene is about 30 years old and has beyond high school education. Her income supports her four children, husband, mother, mother in law, and sometimes her sister and sister’s child. She farms three tomato plots. In the winter she also plants butternut squash. All plots are irrigated from pipes from the nearby river using a pump machine. She purchases fertilizer, pesticide, and seeds. Sometimes she uses cow manure. She keeps economic records of her operation.

**Problems facing Irene’s farm**

**Water** (cited as main problem)
1. The pumping machine sometimes does not work, so she must walk long distances to get water.
2. Water pressure in the irrigation system is uncontrollable and sometimes causes erosion.
3. Neighboring commercial farms use too much of the river water, thus making it impossible for Irene adequately water her plants.

**Inputs** The prices for inputs go up each year and they are too expensive for farmers to buy.

**Information support** Irene indicates she needs more information about applying fertilizer because extension agents give contrasting advice.

**Marketing**
1. Irene indicates she does not have transportation to take produce to market, so sometimes she must rely on extension agents to pick up produce but they are unreliable and sometimes do not show when they say they will.
2. She needs more marketing opportunities. She wished she had more support from agencies to find marketing opportunities.

Other problems
1. Irene often must miss work when her children are sick.
2. Transportation is a problem, as she must walk 4-5 km one-way to get to work.
3. Tomatoes often are infected by tomato blight.

A vegetable farm in Dikgale

Rachel is in her early 40’s and started working on this vegetable project when her son left. This project was intended to teach youth how to produce food and to keep them out of trouble. There were 30 youth involved when it first started but many left because they did not make much money. It is funded by Finland. The entire project is 9 hectares. Irrigation comes from borehole pumps.

Problems facing Rachel’s farm

Marketing
1. Farmers have no transportation to take their produce to market (they now use wheelbarrows to sell produce to the community).
2. Rachel does not have enough money to pay someone else to pick up their produce.

Water
Rachel sometimes does not have money to pay for electricity to run the pumps.

Information
1. Rachel indicates that they need more advice to control disease.
2. Women farmers also want more training in general to learn how to raise vegetables.

Equipment
They want a tractor but cannot afford one.

A vegetable farmer in Wonderboom

Elisa is 42 years old and has two children and a husband living with her. She has four years of elementary education. Her mother and two sisters live in the same community. Elisa raises spinach, onion, beetroot, carrot, and pepper on an 80-foot long, 15-foot wide plot. Her plot is irrigated from the stream. The plots yield better in the wintertime as they get more rains. She only buys seeds or seedlings. She does not buy other supplies such as fertilizer as the prices go up each year and she can’t afford these inputs. She is unhappy with the production since the soil is poor and she has no affordable means to improve the output. She has worked on this government sponsored gardening project for about ten years together with the other 45 members from the same village. Agriculture is her only source of income for her family and her husband does not have a part-time job.

Elisa works alone on farm and she does not get assistance from kids, husband, her mother or sisters. She sells only a small portion of her produce by the road and she keeps a majority for the family subsistence.

Problems facing Elisa’s farm

Information support
1. Elisa wishes that the extension agents would give her more advice. Her plot is the last one in the field so sometimes the extension agent leaves before talking with her. 
2. She needs more help identifying and treating diseases. 

**Resources** 
1. Elisa lacks of credit to purchase inputs. 
2. She does not have fixed market to sell her products. 
3. There is a shortage of water and a reliable irrigation system. 
4. The members of the group would want to buy some farming equipment, but they do not have the capital. 

**Transportation** Elisa indicates that she does not have transportation to buy seeds and sell her produce. 

---

**A farmer in Apel**

Monicah is 62 years old. She has eight kids. They all work in other places, only the youngest remains at home with her. Her sisters and uncles live in the same village with her. She has eight years of education. Monicah grows carrots, spinach and onions on a 200 square meters plot. Agriculture is the only income generator for her. As a senior citizen beyond 60 years old, she gets social security each month from the government. She sells 60% of her produce at local market and keeps 40% for householder consumption. 

Monicah purchases seeds through all accessible means such as extension agents and various companies in the community. She indicates that she usually gets farming information from extension agents and she thinks the information is reliable. 

**Problems facing Monicah’s farm**

**Marketing** 
1. Monicah has no fixed or formal market for her products. 
2. There is no information from the market to guide her production. 

**Water** 
1. There is a scarcity of useable water. 
2. There is no appropriate irrigation equipment to get water both for farming and householder consumption. 

**Subsidies** Monicah worries about the subsidy the government paid to senior citizen is so little and not enough to live on, this is especially true as she is getting older and losing ability to work on farm. 

**Transportation** There is no transportation to distribute the products. Monicah indicates she uses the traditional hard labor methods to transport the products and she usually sells them by the road.
Summary of interviews

The results from the interviews were summarized under the subheadings of farmers’ profile, farming production, and farming information, key problems facing farmers in the following paragraphs.

Farmer profile

Findings from the interviews indicated that 83% of the farmers were black, married females with an education ranging from none to college level. However, most had between two to six years of education. The family size ranged four to ten with an average of five people in a family. The family unit typically included a wife, a husband, and children. Most households owned two to four small plots of land with each plot ranging in size from 30 to 50 square meters. Some of the individuals worked on communal farms.

Farming operations

The principle crops grown were tomatoes, spinach, cabbage, beetroots, carrots and coriандers. Most farmers sold about 70% of their produce in local markets including the side of the road. They also kept some food for home consumption. Earnings from sales were used to purchase input supplies and equipment for farming such as seeds, fertilizers, pesticides, and tractors or to buy other household items. Only a couple of farmers interviewed grew maize. Most farmers used boreholes to irrigate plots, and they also piped water from rivers for irrigation. Only one site visited raised chickens for sale. Most individuals purchased staple food such as maize flour at the market. Agriculture is major income source for these smallholder farmers.

Farming information

The major sources of agricultural information were extension agents, radio, and women’s group meetings. The most critically needed information was related to disease/pest control and cropping systems. Most participants indicated that the information they received was inadequate. However, extension offices were seen as the most reliable information source. Many farming decisions were made in consultation with extension officers.

Top problems facing farming

A nominal group process was performed to identify the top problems facing these smallholder farms in Limpopo province. The results revealed that inadequate technical information was available to support and solve problems encountered in growing season as well as farmers lack of transportation and access to formal markets were two problems ranked highly by participants. Other problems such as lack of access to farm credit to purchase farming input supplies, limited land resources, poor water distribution systems were also placed as high priorities that communities need to resolve.
Conclusions

1. The majority of smallholder farmers in four communities were females with low education levels, but these women were the main supporters of their family’s livelihood.
2. The smallholder farmers interviewed were primarily growing vegetables crops and mostly on gardening projects with the subsidy from government or foreign organizations.
3. Few farming projects were involved with livestock production. Only one site visited raised chickens.
4. The top two problems facing smallholder farmers were inadequate technical information to support farming and lack of formal market and transportation infrastructure to transport agricultural products to market.

Implications and Recommendations

Information and extension services

Inadequate agricultural information and timing undermines the potential of women farmers to improve their production. Most of women interviewed in the case studies were highly involved in agricultural production activities. In addition, most of these women had low education levels and some of them could not read and write. During the interviews, most women farmers expressed their concerns and frustrations over lack of information and technical consultation to improve agricultural productivity. Therefore, information and technical support from extension and other social services needs to be reconstructed and reinforced so that more women farmers can participate and gain valuable information to improve agricultural productivity.

It is clear that extension system in South Africa needs to increase its role in assisting smallholder farmers to obtain information and technology to improve their production. However, statistics from the National Department of Agriculture (2002) showed that about 80% of staff personnel in extension are unqualified for the job and this has a negative impact on their ability to deliver technical information. In addition, the ratio of extension agents to farmer is 1:1500. This ratio is too high for agents to provide quality services to farmer training, field visits, and other services. Also, most of extension agents are males and only a few of the agents are females. All these problems have largely prevented the extension system from adequately and responsively addressing the needs of smallholder farmers. Thus, the government must tackle these problems first to improve accountability of the extension system. More training for extension agents should be scheduled, which will allow them to pass more practical information and techniques to farmers in a timely manner.

Marketing and transportation

Lack of formal market along with inadequate transportation infrastructure for farming products is one of the top two problems facing smallholder farmers in South Africa. Marketing and transportation systems have been seen as a pulse of economic development. Therefore, the government must address this critical need and create a marketing mechanism for smallholder farmers. The government first may need to examine and assess the structure and organization of the regional and local administrations to see how they should be organized to help smallholder agriculture during transition. What role should the National
Department of Agriculture, Agricultural Research Council, and local administrations play in market and infrastructure development to create the conditions that support an effective and efficient smallholder agricultural economy?

**Livestock production**

Alternative income generating activities need to be initiated to ensure gaps in income from agriculture and thus reduce dependency on gardening projects. Some farmers were interested to have other activities increase their income, but it seemed there was no policy initiative and information to get them started. The livestock production as a profitable income generator was only seen on one farm during all visits. Therefore, it is important to explore the potential of livestock production to generate more income and to meet the divergent needs of the family.

**Coordination of development efforts**

Many international and national organizations and NGO’s exist in South Africa to help with the development of the country. However, there seemed to be no communication and cooperation with each other and this could lead to duplicate investment in some areas and ignoring other urgent development issues. Therefore, it is important for the government to designate a strand within extension to manage an effective, national and international network for all development organizations that provide assistance in the community. In this way, local agencies can help manage a number of sources of information to meet farmers’ needs and coordinate efforts.

Various production problems remain as major barriers to develop agricultural enterprises in South Africa. Scarcity of water resources, soil erosion, soaring input costs, shortage of access to credit, lack of information, population growth, and rural youth migration to cities for jobs and better lives represent a few of the problems identified as part of this research effort and are widely recognized in the literature. The new democratic government has to address these problems and face the challenge to reconstruct smallholder agriculture to secure household food security, empower women farmers, and encourage young people to become involved in agriculture.

It is encouraging to notice that during the South African transformation process, greater emphasis has been placed on small-scale farm development. The progress has been made in land reform, access to credit, and market opportunities that are critical to the development of smallholder agriculture and will help secure the resources for smallholder farmers.
References


