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SMALL-SCALE PREVIOUSLY DISADVANTAGED PRODUCERS IN THE SOUTH AFRICAN ORGANIC MARKET: ADOPTION MODEL AND INSTITUTIONAL APPROACH

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LIST OF ACRONYMS

Afrisco	Africa's Farm Certified Organic
ARC	Agricultural Research Center
BDAASA	Bio-Dynamic Agricultural Association of South Africa
BDOCA	BioDynamic and Organic Certification Authority
COPA	Cape Organic Producers' Association
EFO	Ezemvelo Farmer's Organization
EU	European Union
FAO	Food and Agriculture Organization
FGF	Food Garden Foundation
GMO	Genetically Modified Organism
HDRA	Henry Doubleday Research Association
IFOAM	International Federation of Organic Agriculture Movements
NGO	Non-Governmental Organization
OAASA	Organic Agricultural Association of South Africa
SGS	Société Générale de Surveillance
SSP	Situation-Structure-Performance
US	United States
USDA	United States Department of Agriculture

CHAPTER ONE: INTRODUCTION

1.1 Study Setting

The global organic produce industry has experienced rapid growth over the past decade. The global retail market for organic food increased from $10 billion in 1997 to $17.5 billion in 2000 (Kortbech-Olesen 2002). Global growth rates in the organic products market over the past decade have been estimated at an average of 20 to 25 percent per year while overall food sales have essentially remained stagnant (Wesgro; Commission on Sustainable Development 2000). These figures are expected to remain high in the medium term at between 10-15 and 25-30 percent (Kortbech-Olesen 2002). Despite this rapid growth in the organic market, the share of total food sales remains quite small at less than three percent in most countries (FAO, CTA et al. 2001; Kortbech-Olesen 2002).

The rapid expansion of the global organic market has been driven by increased demand for organic products in the developed countries, with the United States (US), the European Union (EU) and Japan leading the way (Kortbech-Olesen 1998; Commission on Sustainable Development 2000). The rapid growth in these markets has been attributed to increasing consumer awareness of health and environmental issues, and to increasing promotion of organic products by the retail sector (Kortbech-Olesen 2002). Concern over possible environmental and health impacts of genetically modified organisms (GMO's) has also played a role in the growth of the organic market (van Zyl 2000; Kortbech-Olesen 2002). All international standards prohibit the use of genetic engineering in certified organic produce. The growth in the organic market has also been fueled by several recent food scares including dioxin contamination and Bovine

Spongiform Encephalopathy (BSE), commonly known as mad-cow disease (Commission on Sustainable Development 2000). The increased demand for organic products that resulted from the BSE outbreak probably came from consumers' overall increased confidence in the organic product, and not specifically because of the decreased risk of contracting BSE from an organic product, because organic standards do not necessarily prevent BSE contamination. The growth in the global organic market has also been driven by other factors. As Dr. Raymond Auerbach, Technical Director of Afrisco, a South African certification body, states,

> The specter of water pollution, pesticide residues in foodstuffs, the ever-spiraling costs of inputs and the burgeoning export market for organic produce have combined to make organic farming both politically correct and economically viable (Auerbach 2002).

In most markets there is a price premium on organic products over conventional products. The premium on organic products in the supermarket generally ranges between 20 and 25 percent (Commission on Sustainable Development 2000). However, according to the Western Cape Investment and Trade Promotion Agency (Wesgro), organic price premiums can reach as high as 500 percent for some products in some markets (Wesgro). In general, as the organic share of the food market increases, and organic products move from a niche market into the mainstream, so the price premium for organic products declines. This decline in the organic price premium can already be seen in some markets. According to a recent report of the Committee on Commodity Problems at the Food and Agriculture Organization (FAO), the average global price premium on organic bananas has decreased from approximately 40 percent in 1999 to an estimated 20 percent in 2001

(FAO and Committee on Commodity Problems 2001). In the case of some exporters of organic products, the potential decline in the price premium on organic produce in markets of high demand is compensated by the strong exchange rate to the foreign currency. The benefit to the exporters of entering the organic export market is that they are able to find markets for their organic products, given the excess demand for organic products in the markets of high demand.

While government efforts to increase organic production in the countries of high demand has decreased the gap between supply and demand, it is expected that demand for fresh organic produce will continue to outstrip domestic supply in developed countries (FAO, CTA et al. 2001). It is important to note that this situation of excess demand may only hold true while the market is perceived as being a niche market. Once the organic market is perceived as being mainstream, it is expected that large-scale producers will enter the market, which could greatly expand the supply of organic produce and in so doing, decrease the price premium. Already in the US there has been a growth in the average size of organic production units. For example, the California Department of Agriculture, which keeps records of all certified and non-certified organic production units, reports that the average size of organic production units grew during the 1990's (National Organic Program 1997). However, to date, the organic market in developed countries is characterized by excess demand. According to a recent white paper by the UK Soil Association, the UK currently depends on imports for over 75 percent of its organic products and ingredients (Soil Association).

At the same time, the developing world's share of global commodity markets has declined by approximately one fifth the since the early 1970's. In order to compensate

for these lost markets, governments of developing countries are looking for new opportunities in niche markets (UNCTAD 2002). The organic produce market is one such niche market. It is estimated that the total global organic market exports from developing countries account for $500 million (Harris and Cadoret 2001). It is also estimated that of the 130 total countries that produce commercial quantities of certified organic products, 90 are developing countries, including approximately 30 African countries (Kortbech-Olesen 2000).

In South Africa today the greatest potential for profit in the organic market is in the export market. This is because of the weak exchange rate of the Rand, the price premium on organic products, and the growing demand for organic imports by the EU, the US and Japan. However, entry into the export market may not be the best option for all producers. Auerbach cautions against entry into export markets because export markets can be fickle and the bureaucracy involved in international certification and export is "formidable" (Auerbach 2002). Auerbach stipulates that for producers who are entering a formal market for the first time, it is important to initially enter the organic market through local channels to gain marketing skills and overcome obstacles before entering the export market and taking on the additional requirements for export (Auerbach 2002). To date, there are no small-scale producers involved in the export market for certified organic produce in South Africa (Mead 2002). The domestic organic market in South Africa can be a profitable option for small-scale producers as they are able to obtain the domestic price premium on organic produce which generally ranges between 5 and 60 percent, although it does vary significantly among products (Hartmann 2002).

1.2 Organic Agriculture as a Development Tool

Given that developing countries are increasingly exporting organic produce to developed countries, and are also developing domestic markets for organic products, some in international development have promoted organic trade both domestically and internationally as a means of increasing the income of small-scale farmers by taking advantage of the organic price premium (Walaga). This conclusion is based on the assumption that organic trade could improve the livelihoods of small-scale farmers and has been developed without a clear understanding of why or how small-scale producers enter this market. The assumption also appears to be based on the supposition that the organic price premium is a permanent fixture in the market. The price premium may endure for a number of years, during which time it would provide a boost in income to producers in the organic market, however it is expected that the price premium will ultimately decline. This paper will draw from neo classical and institutional economic theory to address the questions of why and how small-scale producers enter the organic market in South Africa.

The idea that organic trade can be used as a development tool often appears to be based on the perception that many small-scale farmers in developing countries are "organic by default," and that it is therefore relatively easy for them to meet organic standards and enter the organic market. The assumption of "organic by default" consequently leads to further assumptions regarding the producer's decision to adopt organic production practices and enter the organic market. By adoption, we refer to both the broad set of changes in investments and in the methods of production in order to produce a product differentiated from conventional produce through its production process, and the

adoption of the institutional and organizational structure necessary to produce and market organic produce. Due to the lack of empirical research in the area of small-scale producer adoption of organic production practices and market entry decisions in developing countries, these assumptions remain largely untested. Therefore policy decisions in this area are based upon assumptions that have little empirical support.

There has also been very little attention paid to how small-scale producers gain access to domestic organic markets. There are several marketing channels through which producers can gain access to the organic market, including direct marketing of produce to retailers, marketing through an intermediary, or marketing through an association or a cooperative. According to a recent report by FAO et al., organic produce is a buyer-driven commodity that will increasingly be supplied to the consumer through supermarket supply chains (FAO, CTA et al. 2001). Already in many countries including South Africa, supermarkets are the largest retailers of organic produce. Therefore, regardless of the marketing structure, it is important to consider whether the supermarkets are willing to purchase organic products from small-scale producers and if so, under what conditions. If supermarkets are unwilling to trade with small-scale producers this could be a barrier for market entry.

The institutional environment of the organic market is characterized by high information costs. These costs arise in large part because it is impossible to tell the "organic quality" of the product with the senses. "Organic quality" here refers to the level to which the produce meets organic production, processing and handling standards. Alternative marketing structures manage the situation of high information costs in different ways and with varying resulting levels of performance of producers in the organic market.

Performance is measured by access to markets, profitability, and the level of independence in the market.

This paper examines the questions of why and how small-scale previously disadvantaged mixed vegetable producers are involved in the organic market in South Africa. The study will determine what factors influence the small-scale producer's decision to enter the organic market, including incentives such as profit and emotions, and the necessary capacities such as institutional structures, access to capital, and access to information. A better understanding of why producers enter this market will provide insight into whether the participation of small-scale producers in the organic market is sustainable in the long term, with or without the price premium, and, if it is sustainable, how to formulate policies to encourage entry into the organic market. The paper will also address the question of how small-scale producers gain access to the organic market, specifically looking at how the alternative marketing structures affects the performance outcomes, given the environment of high information costs.

Two distinct models will be used to address the above issues. An adoption model will be used to determine what factors influence the producer's decisions to adopt organic production practices and enter the organic market. The adoption model is the best model to address this question because it allows us to clearly identify the factors that influence the producer's decision to adopt a set of production practices, investments and institutions that are necessary for entry into the organic market. To address the issue of how alternative marketing structures impact the performance of small-scale producers in the organic market, Allan Schmid's Situation Structure Performance (SSP) model for institutional analysis will be used (Schmid 1978). This model provides an excellent

framework to clearly examine how alternative structures of the organic marketing chain affect the performance of small-scale producers.

1.3 South African Organic Sector

A study in South Africa is an excellent opportunity to explore these questions for several reasons. South Africa has a well-developed horticultural export market and the largest domestic market for organic produce on the continent of Africa. The development of the South African organic market is partially due to its relatively high per-capita GNP compared to other African countries and partially due to the fact that supermarket chains control more than half of food retail. A certified organic export market has been established and efforts are underway by the supermarket chains and organic producers to further develop the domestic organic market. The annual value of the South African domestic organic product market for 2002 is estimated at US$500 – 830 thousand and organic production is growing rapidly at an estimated 50 percent per year (Wesgro). As a percentage of the total food market, organic products accounted for 0.3 percent as of June 2001 (OAASA 2001). The number of certified producers in South Africa is also growing rapidly. In 2000 there were approximately 50 to 60 certified organic producers and the same number of uncertified producers (van Zyl 2000). As of April 2002, there were 239 certified organic farms in South Africa covering 211,000 hectares, of which 186,000 hectares was extensive grazing and 6,000 was for the collection of natural products (Auerbach 2002). Certified organic agricultural land is currently 0.25 percent of total agricultural land and approximately 0.41 percent of total farm units are certified organic (OAASA 2001). See Table 1 for an overview of certified organic farms in South Africa.

Several recent developments in South Africa have positioned the country well for further expanding its organic market. This includes the interest of the supermarket chains in further developing the market, the establishment of an organic section in the Johannesburg fresh produce market, the proposition of national regulations for organic products, the establishment of South African organic certification bodies, and the formation of three South African organic associations.

Table 1. Overview of Certified Organic Farms and Areas in South Africa

Province	Afrisco	BDOCA	Ecocert	SGS	Others	Total farms	Total hectares
Western Cape	0	5	67	23	7	**102**	7,000
Eastern Cape	18	0	13	3	0	**34**	3,500 (+180,000[1])
Northern Cape	0	0	5	0	2	**7**	2,000 (+6,000[2])
Free State	0	0	7	2	0	**9**	2,000
KwaZulu-Natal	11[3]	1	4	1	0	**17**	500
Mpumalanga	0	2	8	2	0	**12**	500
Limpopo	0	2	12	2	0	**16**	5,000
North West	1	1	3	1	0	**6**	500
Gauteng	0	12	3	0	0	**15**	2,000
Unsure of prov.	-	9	-	4	8	**21**	2,000
Total	**30**	**32**	**122**	**38**	**17**	**239**	**25,000 (+186,000)**

Table reproduced from Raymond Auerbach, (2002).

Supermarket chains are the main retailers of organic produce in the domestic market in South Africa. The two main supermarket chains in South Africa, Pick n' Pay and Woolworths, have worked at establishing a domestic market for organic products by building up the volume and variety of organic products available, and by building consumer awareness and confidence in organic products (Auerbach 2002). Woolworths has recently conducted a consumer survey to determine the organic customer profile for

[1] This land area refers to areas certified for extensive grazing of livestock.
[2] This land area refers to areas certified for the collection of natural products.
[3] This number includes 10 individual producers and one group of 28 producers.

their Western Cape stores. The study found that consumers who purchase organic products in those specific stores are over 36 years of age, English speaking, and have a higher than average level of education. No correlation was found for gender or income (Du Toit and Crafford 2001). Both supermarket chains have targeted specific stores to supply organic produce and are working on developing organics in those stores before they expand to new regions.

In May 2002 Interaction Market Services, a market agent in the fresh produce market of Johannesburg, established an organic section on the trading floor. As this is a very new source of organic produce, the supermarkets to date have not participated in this channel; however, it provides another marketing channel option for both the supermarkets and producers.

South Africa is currently in the process of developing national organic standards legislation. The South African National Department of Agriculture has published a third draft of the Regulations Regarding Control over the Sale of Organically Produced Products which incorporates comments on the first draft made by a working group comprised of retailers, producers, and consumers as well as from the general public. The proposed regulations have been developed to EU and International Federation of Organic Agriculture Movements (IFOAM) standards and it is expected that they will be finalized in early 2003. The objective of establishing the regulations is to build the South African organic market by ensuring that all stages of organic production from farm to fork comply to internationally recognized organic standards, protect consumers against deception through unsubstantiated claims and thus ensure consumer confidence, and level the playing field by creating the opportunity to establish domestic certification bodies

which offer less expensive certification than international certification bodies (Julius 2002).

Since the publication of the first draft of national organic standards in 2000, two South African organic certification bodies have been established: Africa's Farm Certified Organic (Afrisco), and BioDynamic and Organic Certification Authority (BODCA). Afrisco is a privately owned firm and BDOCA is a non-profit organization, and both certification bodies certify to the proposed South African regulations. These bodies offer certification for the South African market at a reduced cost compared to the international certification bodies such as Ecocert, Soil Association, SGS and EKO, which were already active in certifying producers in South Africa. Both Afrisco and BDOCA have set a goal of assisting small-scale producers in obtaining certification. As a result, certification through these bodies is more accessible to small-scale producers. The domestic certifiers have generally been very well received by producers, supermarket chains and other actors in the South African organic market. In a recent article, the Farmer's Weekly rated the organic certifiers currently operating in South Africa and the two domestic certifiers received top ratings (Kupka 2002).

South Africa also has three organic associations, Organic Agriculture Association of South Africa (OAASA), the Cape Organic Producer Association (COPA), and BDAASA (BioDynamic and Organic Agricultural Association of Southern Africa). The associations were formed by producers who were concerned with the lack of consumer trust in organic products in South Africa. Their members are mostly small-scale producers, with a few large-scale producers, concerned citizens, processors, distributors,

and retailers. They are active in promoting and developing the organic agriculture sector (Jackson 2002).

1.4 Small-Scale producers in South Africa

This study focuses on small-scale previously disadvantaged producers because this group is key to examining the potential of organic production to be used as a development tool. "Previously disadvantaged" refers to any group of people that was legally disadvantaged under the apartheid regime in South Africa. Small-scale previously disadvantaged producers[4] face additional constraints in the market because of this history, which differentiates them from other small-scale producers. This group was selected for the study because it is this group that is targeted in development projects, and because most small-scale producers in South Africa fit into this category.

At the present time, very few small-scale producers or producer groups are actively involved in the organic market in South Africa. As a result, small-scale producers' contribution to the organic market is currently small, but is slowly increasing as more organic projects get underway. The Provincial Government of KwaZulu-Natal has initiated preliminary discussions on developing a project using organic agriculture as a method of improving rural livelihoods. If the project goes ahead, it will be the largest organic project working with small-scale producers in the country. It appears that a majority of those small-scale producers that are actively participating in the market are doing so with the assistance, or at least the guidance, of an outside influence such as a non-governmental organization (NGO), development body, certification body,

[4] For ease of reading, this group shall be referred to as small-scale producers for the remainder of the paper.

government agency, or an individual actor. As such, these producers receive a form of subsidy. This paper therefore focuses on how these producers are involved in the market, including the role of the outside influence, and why the producers opted to enter the market, including the role of any hidden subsidies in that decision. The study does not address the question of whether it is viable for small-scale producers to operate independently in the market, as the researcher was unable to find a small-scale producer or producer group operating independently.

1.5 Research questions

Specifically, the study investigates:

1. What are the incentive and capacity variables impacting the adoption decision, and what are their signs and relative significance compared to the other variables? Incentive variables include profitability, and health and environmental issues. Capacity variables include institutional structures, and access to factors of production and information.

2. Given that the physical and natural environment of the organic market is characterized by high information costs, how do the alternative marketing structures manage this situation and how does the impact small-scale producers, and how do the alternative structures for preventing opportunistic behavior affect the performance of the small-scale producer in the organic market?

The lessons learned from this study will provide insight into several questions regarding the potential for the small-scale producer in the domestic organic market in South Africa.

The answers to these questions will: 1) provide policy makers with a greater understanding of how small-scale producers are currently involved in the organic produce market; 2) identify specific obstacles and bottlenecks that need to be overcome to ensure greater participation by small-scale producers; and 3) identify areas where further research is needed to understand how small-scale producers can be incorporated into the organic market.

1.6 Paper Outline

This section will provide a brief outline of the rest of the paper. Chapter two will present the theory of the adoption model framework and institutional theory behind the situation structure and performance model. The chapter will also present the hypothesis that will be tested using the SSP framework and a brief discussion of the use of case studies. Chapter three will provide the study context of why and how small-scale producers enter the organic market in South Africa. Chapter four will present the adoption model analysis. Chapter five will present the institutional analysis. Finally, Chapter six will present the conclusions, implications and suggestions for further research.

CHAPTER TWO: ADOPTION MODEL AND INSTITUTIONAL FRAMEWORK

This paper uses two distinct models for analysis of the research questions. An adoption model will be used to examine case studies to gain an understanding of why small-scale producers are engaged in the organic market in South Africa. A Situation-Structure-Performance (SSP) model will then be used in an institutional analysis of different market structures through which small-scale producers enter the organic market.

2.1 Adoption Model

The study uses an adoption model framework to analyze case study data to determine the incentive and capacity variables, and their sign and significance, for small-scale producers' decision to adopt organic farming practices and enter the organic market. Adoption models have traditionally been used to analyze decisions of adoption of agricultural technology. However, adoption models have previously been used to model adoption of conservation practices (Feather and Amacher 1994; Soule, Tegene et al. 2000). In his 1999 study, Burton used an adoption model to examine the determinants of the adoption of organic horticultural techniques in the United Kingdom (Burton 1999). This study is a new application of the adoption model that looks not only at the adoption of organic production practices but also at entry into the organic market in the context of a developing country. The adoption model is a general model that can be applied to any specific situation to define the relevant incentive and capacity variables that affect the adoption decision. Those variables can include any institutional, organizational, social, political, market, asset or other factors that vary across adopter and non-adopter groups and may help to explain the adoption decision. The use of the adoption model in this

context should help to clarify relevant factors in the small-scale producer's decision to enter the organic market, and indicate the relative importance of those factors.

The model used to represent the organic adoption decision is a three-step model. The first step, represents the adoption of organic farming practices, the second step, represents the adoption of certification, assuming that the producer has already adopted organic production techniques, and the third step, represents participation in marketing channels, assuming that the producer is already practicing organic production techniques. This multiple step model was selected because the specific variables and their relative significance will differ with the different steps of the adoption decision, and because the different steps of the decision impact one another.

While there has been little research on the incentive and capacity variables that influence small-scale farmers' decisions to enter the organic market, there have been research conducted on the constraints facing small scale previously disadvantaged farmers in the conventional agricultural sector in South Africa. Small-scale producers in the organic sector face these same constraints plus additional constraining factors due to the specific demands of the organic market.

In Louise Fenwick's study of constraints on the growth of small-scale agriculture in KwaZulu-Natal, she determined that the following were significant constraints: liquidity, including savings, cash earnings, and access to credit; inefficient land markets and tenure insecurity; family labor shortage; information costs; high transaction costs; and farm size. Fenwick's study concluded that the prime constraint on growth of small-scale agriculture is liquidity levels (Fenwick and Lyne 1999). South Africa's Strauss Commission Interim

Report of the Commission of Inquiry into the Provision of Rural Financial Services also found that liquidity levels are the prime constraint on growth of small-scale agriculture (Strauss Commission 1996).

It has also been noted that South Africa's move towards liberalizing its agricultural sector has been characterized by an undersupply of information and inadequate access to the information that is available (Jooste and Groenewald 2000). The lack of information is also a problem within the organic sector. In a 1997 survey of community development groups in Sub-Saharan Africa, the Henry Doubleday Research Association (HDRA) found that 63 percent of respondents stated that a lack of information was a reason for not adopting organic farming practices, making it the most widely cited reason. The report concluded that organic agriculture is unlikely to be adopted by farmers in sub-Saharan Africa without one or more of the following incentives: government policy to support or require organic production; desire by farmers to use organic methods because of health, environmental, philosophical, scientific, or intuitive reasons; economic incentive to farm organically through a government subsidy or a price premium (Harris, Lloyd et al. 1998).

Studies of constraining factors for growth in conventional agriculture in Sub-Saharan Africa also provide insight into relevant factors for the adoption of organic agriculture. In his study of Zimbabwe, Moor found that,

> The limited breadth, duration and assurance of an individual's property rights to land is a significant constraint on the adoption of on-farm investments and agricultural productivity in the small farm sector of Southern Africa (Moor and Nieuwoudt 1998).

The HDRA survey also found that land tenure directly influences a farmers decision to adopt sustainable agricultural practices that require investment of time and money and have long term benefits (Harris, Lloyd et al. 1998).

Specific constraints facing producers in the organic sector include certification, bureaucracy and excessive paperwork, lack of subsidy during conversion to organic methods, lack of organic material and market access. Certification is difficult for small-scale farmers because of the high cost of certification, the complexity of the certification process and the required knowledge in selecting a certifier for a specific market, and the need for reliable market linkages (Barrett, Browne et al. 2001). Due to strict record keeping and audit trail requirements, the amount of paperwork and bureaucracy can be overwhelming. This problem is exacerbated by the low literacy skills of many small-scale farmers who also often speak only the local language. Some feel that the paperwork required for certification needs to be simplified to lower this barrier for small-scale producers (Barrett, Browne et al. 2001). Others feel that relaxing the certification requirements for small-scale producers will weaken the organic market as a whole. Given that some small-scale producers have gained access to the certified organic market, there is an opportunity to study these producers' decisions to determine whether certification is a barrier, and if so, how it can be overcome.

When producers convert from conventional production to certified organic production, they are required by most South African certification bodies to enter a three-year period of conversion. With some certification bodies, if the producer can prove that the production practices on the land have met organic standards for the previous three years, then the conversion period is reduced by up to two years. The conversion period is a

difficult time for producers because they face a reduced yield during the initial period of conversion, and often do not receive the organic price premium while in conversion. However, some of the supermarket chains in South Africa will buy produce that is in conversion and pay the producers the organic price premium. This is specifically done as a subsidy to producers to encourage them to convert to organic production and thereby increase the supply of organic produce in South Africa (Hartmann 2002). Also, "Most reports suggested that [after the initial period of organic production], organic yields then catch up and match conventional yields from the smallholder sector" (Barrett, Browne et al. 2001). A recent study in the UK found that in the mid-conversion period producers are faced with a reduced income (up to US$149 per hectare in this study). In the long run, producers should see an increase in revenue of US$104 per hectare, but most would not opt for conversion unless they received support during the mid-conversion period (O'Riordan 2001). Therefore, it may be necessary to establish a subsidy program in order to encourage widespread adoption of organic farming.

The HDRA survey also found that the lack of organic material could have a negative effect on the decision to adopt organic farming methods (Harris, Lloyd et al. 1998). Manure and sources of green manure such as crop residues and processing waste are often used in other activities. Labor was also found to be a constraining factor in the growth of small-scale agriculture, and could be of even greater importance in organic agriculture. One South African organic producer estimates that large-scale organic production only takes 3-4 percent more labor than conventional production, while small-scale organic production takes 30-40 percent more labor than conventional small-scale production (Pickering in van Zyl 2000). However, the elasticity of substitution of labor

for capital has not been calculated for organic agriculture, and there is much conflicting anecdotal evidence about labor requirements in organic production.

The establishment of market linkages with producers is also necessary. These linkages with small-scale producer groups often come about because of support from NGO's, development bodies, certification bodies, government agencies, or individual actors. These organizations provide technical, financial and capacity building assistance and help the group to find markets (Barrett, Browne et al. 2001). The presence of an outside influence could therefore be important for small-scale producer to enter the organic market.

Finally, it is also expected that access to inputs, social networks, and access to appropriate transportation will have an effect on a producer's decision to enter the organic market. The following sections will present the expected relevant variables and their sign significance for each of the three steps in the recursive model of the decision to adopt organic production practices and enter the organic market.

2.1.1 Adoption of organic production practices

The producer's decision to adopt organic production practices should conform to the following function. The hypothesized sign of the variable effect is indicated above each variable.

$$Z_1 = f\left(\overset{-}{x_1}, \overset{-}{x_2}, \overset{+}{x_3}, \overset{+}{x_4}, \overset{+}{y_1}, \overset{+}{y_2}, \overset{+}{y_3}, \overset{+}{y_4}, \overset{+}{y_5}\right)$$

$$x_1 = x_5 - x_6 = f\ (x_7, x_8, x_9, x_{10}, x_{11}, x_{12}, x_{13})$$
$$\qquad\quad +\ \ -\ \ +\ \ -\ \ +\ \ +\ \ +$$

Z_1 = Adoption of organic farming practices

Incentive Variables

x_1 = income before adoption – income after adoption
x_2 = access to conventional market
x_3 = access to organic market without certification
x_4 = land tenure
x_5 = income before adoption
x_6 = income after adoption
x_7 = price of conventional product
x_8 = cost of conventional inputs
x_9 = quantity of labor before adoption
x_{10} = price of organic product
x_{11} = cost of organic inputs
x_{12} = quantity of labor after adoption
x_{13} = cost of conversion

Capacity Variables

y_1 = availability of labor
y_2 = access to land
y_3 = access to credit
y_4 = knowledge of organic production practices
y_5 = access to organic inputs

For small-scale producers the adoption of organic techniques is most likely to depend upon the difference in income before and after adoption. This difference in income is a reflection of price of the product, cost of inputs, quantity of labor, and cost of conversion. The factor elasticity of labor for capital will have an important effect on this profit function.

Poor small-scale producers tend to have very high discount rates. As a result, they are less willing to invest in the present for benefits received in the future. Therefore, if the difference in income is negative, even if only in the short term, it may be necessary for small-scale producers to receive a subsidy to convert to organic production. Land tenure will also serve as a positive incentive for adoption of organic production practices.

Organic practices are a long-term investment in the soil and thus, those who own their land and are therefore more likely to be able to reap the future benefits, will be more likely to invest in these improvements.

Adoption of organic production practices is also likely to be dependent on whether the producer has market access for their conventional product. If they have no access to a conventional market, but they do have access to an organic market, then this could also serve as a strong incentive for conversion (especially if that market does not require certification).

Other important factors that we would expect to be present in order for adoption of organic production practices to take place include labor, land, credit, knowledge of organic production practices and access to organic inputs.

2.1.2 Adoption of organic certification

The decision to adopt organic certification is considered separately from the decision to enter the organic market because certification is not always a requirement for market access. The decision to adopt organic certification, assuming the producer is already practicing organic production techniques, should conform to the following function. The hypothesized sign of the impact of the variable is indicated above each variable.

$$Z_2 = f\left(\overset{-}{x_{14}}, \overset{-}{x_2}, \overset{-}{x_3}, \overset{+}{x_{15}}, \overset{+}{x_4}, \overset{+}{y_3}, \overset{+}{y_4}, \overset{+}{y_6}, \overset{+}{y_7}, \overset{+}{y_8}\right)$$

$$x_{14} = x_{16} - x_{17} = f\left(\overset{+}{x_{18}}, \overset{-}{x_{19}}, \overset{+}{x_{20}}, \overset{+}{x_{21}}, \overset{+}{x_{22}}\right)$$

Z_2 = Adoption of certification

Incentive Variables

x_{14} = income before certification – income after certification
x_2 = access to conventional market
x_3 = access to organic market without certification
x_{15} = access to organic market requires certification
x_4 = land tenure
x_{16} = income before certification
x_{17} = income after certification
x_{18} = price of uncertified organic product
x_{19} = price of certified organic product
x_{20} = cost of certification
x_{21} = cost of credit
x_{22} = incremental cost of marketing organic product

Capacity Variables

y_3 = access to credit
y_4 = knowledge of organic production practices
y_6 = access to certification
y_7 = outside influence
y_8 = social networks

In the decision to adopt organic certification, market access is likely to have a large influence on the producer's decision. If the producer has access to organic markets, and the organic price premium, without certification, then there is no incentive to obtain certification. The South African national standards have not yet been finalized, and therefore, there is currently no national requirement that products sold as organic be certified. However, many of the retail chains already require that their suppliers be certified. If the producer can only gain access to the organic market with certification, and if the producer has limited access to the conventional market, then this provides an incentive to obtain certification and market access.

Income is also likely to have a large effect on the producer's decision to obtain organic certification. The difference in income is reflected in the price of the product, the cost of certification, the cost of credit, and the additional cost of organic marketing. Included in

the cost of marketing are the cost of finding a buyer, transportation, and packaging. Due to the high cost of certification, we would expect that access to credit could have a positive effect on the decision to obtain certification. Land tenure is also likely to have a positive effect on adoption, as certification is an investment in the property.

Knowledge of organic farming practices also has an effect on this decision because of the information required to achieve the standards of the certification bodies. Currently in South Africa producers have some difficulty obtaining information on how to meet certifiers requirements. In order to meet ISO 65 standards, the general requirements for bodies operating product certification systems, certification bodies are very strict about keeping consulting and certification activities separated. The result is that many producers can only gain access to this information by paying a consultant.

The outside influence variable represents an NGO, development body, certification body, government agency, or individual actor that assists the small-scale producer. Social networks represent social connections through which the producer can gain assistance in the organic market. Both the outside influence and the social network can affect the adoption of certification by either directly providing or easing access to other capacity variables.

2.1.3 Participation in organic marketing channels

The decision to participate in the organic marketing channel is closely tied to the decision to become certified. We would not expect a producer to obtain certification unless they had the intention of entering the organic market, however, it is still possible to enter the organic market in South Africa without certification through farmer's markets,

wholefood stores, and other retail outlets. Therefore, these two decisions are considered separately for the purposes of this study. The decision to enter the organic market, assuming that the producer has adopted organic production practices but is selling the product on the conventional market, should conform to the following function. The hypothesized sign of the impact of the variable is indicated above each variable.

$$Z_3 = f\ (\underset{-}{x_{22}}, \underset{-}{x_2}, x_3, \underset{-}{x_{15}}, y_3, y_7, y_8, y_9)$$

$$x_{22} = x_{23} - x_{24} = f\ (x_{17}, \underset{-}{x_{18}}, x_{21})$$

Z_3 = Participation in organic marketing channels

Incentive Variables

x_{22} = income in conventional market – income in organic market
x_2 = access to conventional market
x_3 = access to organic market without certification
x_{15} = access to organic market requires certification
x_{23} = income in conventional market
x_{24} = income in organic market
x_{17} = price of uncertified organic product
x_{18} = price of certified organic product
x_{21} = cost of marketing organic product

Capacity Variables

y_3 = access to credit
y_7 = outside influence
y_8 = social networks
y_9 = access to transportation

In this situation one would expect both income and market access to have a large effect on the decision to enter the organic market. The difference in income before and after entry into the organic market is reflected in the price of the product in the different markets and the incremental cost of organic marketing. Access to conventional markets should have a negative effect on organic market entry because if producers have secure

access to a market, they will be less likely to look for other marketing options. Also, if producers do not have access to the conventional market, then the organic market may be their only viable marketing option. If producers have access to the organic market, and therefore the organic price premium, without having to bear the additional cost of certification, we would expect this to have a positive effect on entry into the organic market.

It is hypothesized that the variable representing outside influenced is likely to have a strong positive effect on the decision by the small-scale producer to enter the organic market.

2.2 Institutional Framework

2.2.1 The SSP Framework

The SSP model has previously been used to look at marketing institutions, however, this is a new application of the model looking specifically at the marketing options of the small-scale producer in the organic sector in South Africa, and the structure of organic producer groups.

The SSP framework helps to gain insight into how the inherent characteristics of a situation create interdependencies between different groups, and how the selection of different institutions, or structural alternatives, affects the performance outcomes. This study uses the SSP framework to examine how alternative marketing structures affect small-scale producers in the environment of high information costs, and how alternative

structures that prevent opportunistic behavior by different actors along the marketing chain impact producers.

2.2.2 Small-Scale Producers in the Organic Market

South African supermarket chains entered the organic market as a result of requests from their consumers (Everett 2002; Hartmann 2002). As Phil Hartmann, Research and Development Manager at Woolworths explains, it is very important that the company maintain product integrity for their consumers (Hartmann 2002). If consumers demand organic produce, Woolworths must ensure that the product meets some standard of organic, and therefore, they require certification. The need for certification arises because it is not possible to determine the "organic quality" of the good through the use of the senses. According to De Haen:

> Organic is a process claim and not a product claim and products of organic agriculture should be defined by the technology and inputs used, and not explicitly by the inherent qualities of the product itself (De Haen 1999).

It is therefore necessary to seek outside information through inspection and certification to ensure that the production practices meet certain standards which makes organic produce a high information cost good.

Currently in South Africa, there are no regulations on the sale of organic products. This creates an interdependency between producers and consumers as to who will pay the costs of providing information on the organic quality of the product. Products sold as "organic" could be certified by an agency with high organic standards or the product

could be uncertified and have dubious organic quality. Consumers therefore lack confidence when they purchase a product labeled as "organic" that they are getting the additional attributes for which they were paying. Currently, the rule governing the sale of organic produce is *caveat emptor,* or let the buyer beware. Consumers have to bear all the costs of determining whether a product meets their standards as "organic". The result is that those consumers who choose to purchase organic products often make "mistakes", in the sense that they pay the price premium for a non-organic product. The rule of *caveat emptor* implies that consumers do not have the right to seek damages if they discover that a product is claiming to be organic when it not.

This situation appears to benefit producers, in that they do not have to bear any of the costs of providing information to the consumer. However, producers have also advocated for the establishment of national standards in order to prevent the unscrupulous use of the term organic. Producers hope that regulation on the sale of organic products will boost consumer confidence and, ultimately, boost demand. Large-scale organic exporters also encouraged the Department of Agriculture to initiate the establishment of the regulations as it should result in greater confidence in South African organic products by importers.

In order to decrease the information costs to their consumers and increase their confidence in organic products, the major supermarket chains in South Africa have begun to require certification before the national standards have been finalized. Under this system, the producer is responsible for ensuring that they are properly certified and that their product is correctly labeled. Therefore, the onus for finding or providing information has been shifted from the consumer to the producer. There are also benefits to producers such as the strengthening of the differentiation between organic and non-

organic produce, which should result in increased consumer confidence in organic products, and thus decrease the risk of investment in organics by the producer. See Table 2 for an outline of the SSP model.

Table 2: SSP: Information Cost

Situation	Structure	Performance
Good: organic Produce Situation: high information cost Actors: Consumers Small scale (SS) producers Interdependency: Who bears the cost of providing information to the consumer?	1. Caveat emptor (current situation of general market in South Africa). 2. Required certification and labeling that the producer meets production standards (current situation of major retailers in South Africa).	1. Certification programs exist, but consumer bears information costs. Consumer is likely to make mistakes and cannot seek changes. Producers can use term "organic" unscrupulously which decreases consumer confidence in product and increases risk of investment for producer. 2. Consumers make fewer mistakes and have greater confidence in the product. Producers bear all information costs. Costs may be excessive for SS producers and can serve as a barrier to entry. Greatly decreases unscrupulous use of term "organic" which decreases risk of investment by producer.

The inherent characteristic of organic produce as a high information cost good also affects the marketing options available to small-scale producers. The product identity of organic produce must be maintained throughout the supply chain, and because organic produce is a high information cost good, the only way to achieve this is to prevent intermingling with other products and to maintain traceability by maintaining an audit trail through the marketing chain. As a result, the costs of preserving product identity in the organic marketing chain are relatively high. These costs must be carried by an actor in the marketing chain, generally the consumer, producer or retailer. In general, we would expect the market characteristic of high information costs to lead to greater control along the marketing chain to ensure product identity at the lowest cost possible. It is in the best interest of supermarkets and intermediaries to exert control through certification requirements and greater control along the marketing chain from their suppliers, to the

processors and packagers to the retail stores. These market structures may make it more difficult for small-scale producers to enter the market. There are four distinct marketing options available to small-scale producers to gain market entry. See Table 3 for an outline of the SSP model.

Table 3: SSP: Marketing Options

Situation	Structure	Performance
Good: organic produce Situation: high information cost Actors: Small-scale (SS) producers Retailers (supermarket chains) Interdependency: who bears the costs of maintaining product identity.	1. Independent SS producer markets produce directly to retailer.	1. Marketing and certification costs are high for SS producers. SS producer must have skills necessary to maintain audit chain for certification. May not be a viable option without subsidy. Retailers must buy produce from many small producers. This increases the transaction cost for the retailer and may not be cost efficient.
	2. Producers market produce to retailer through an intermediary.	2. SS producers can participate in the market, but lose marketing profits. SS have one market option and thus must be able to prevent exploitation. Certification costs are still high. May not be a viable option without subsidy. Retailers are more willing to work with SS producers as there is greater consistency in volume.
	3. Producers form a cooperative that markets product to retailer.	3. Cost-sharing decreases the marketing and certification cost to individual SS producers. Must be able to prevent members from "cheating" or the whole group is sanctioned. Greater consistency in volume means retailers are more willing to work with ss producer groups, but volume may still be too low.
	4. Producers enter into a joint venture with a larger firm.	4. SS producers can participate in the market, but may lose marketing profits. SS have one market option and thus must be able to prevent exploitation. Producers may receive subsidy from partner. Greater consistency in volume means retailers are more willing to work with ss producer groups, but volume may still be too low.

Small-scale producers can be certified independently as individual producers and can market their produce directly to the retailer. In selecting this option, the small-scale producer will bear full marketing and certification costs and they must have skills necessary to maintain audit chain for certification. These marketing costs include the

costs of packaging and transporting the produce to the retailer's standards. Most major supermarket chains in South Africa require that all organic produce be in its final packaging when it is delivered to the supermarket distribution centers. This prevents contamination and intermingling with conventional products. As a result, without subsidization, it may not be a viable option for small-scale producers who do not have the skills or the financial means to operate independently in the organic market. Retailers, in particular the supermarket chains, may also be unwilling to purchase organic produce from individual small-scale producers because of the increased cost in ensuring product identity and the increased transaction cost from negotiating separate agreements with each producer.

A second option for producers is to market their produce through an intermediary such as a wholesaler or a packager. Producers must still obtain certification independently, and therefore face high certification costs, however their costs of packaging and transportation are reduced. Small-scale producers marketing through an intermediary are likely to lose the profits derived from marketing, but they are likely to make a profit from production. This option also entails high-risk for small-scale producers because they have only one marketing outlet and therefore run the risk being exploited. Thus it is necessary for producers to establish means of preventing exploitation. This risk of exploitation of other producers is relatively low in South Africa at the moment because the market is constrained by supply, so it is in the best interest of intermediaries and retailers to maintain good relationships with their suppliers so they do not sell elsewhere. However, small-scale producers still risk potential exploitation because they may not have access to other market outlets. The benefit of this option is that it allows small-scale

producers to participate in the market because retailers are more willing to accept produce from small-scale producers when they do not have to negotiate with them individually, and when there is greater consistency in volume and variety due to the additional supply from the wholesaler.

Another option is for producers to enter into a joint venture with a larger firm. As in the previous case, this allows the small-scale producer to participate in the market, but they may lose the potential marketing profits. They also face the same risks of exploitation and need to establish the means to prevent it. Retailers are again willing to work with small-scale producers because they negotiate with one firm and have greater consistency in supply.

A final option is for small-scale producers to form a group or cooperative to market and become certified as one unit. Small-scale producers are able to share the marketing and certification costs, which decreases the cost to individual producers. Retailers are also more willing to purchase organic produce from small-scale producers because it is less costly for them to ensure product identity than with individual producers, and there is greater consistency in volume and transaction costs are reduced as the retailer is dealing with one supplier. However, because organic produce is a high information cost good, there is the potential for members of the group to "cheat" and not follow organic production practices. Therefore, the group must be able to prevent opportunistic behavior by members of the group, or the whole group will be sanctioned.

The characteristic of organic produce as a high information cost good results in an interdependency between the transacting parties in the organic market in determining the

quality of the product. The problem of preventing opportunistic behavior is present in all transactions between members of organic cooperatives, producers, packagers, processors, retailers and any other actors in the organic market. Opportunistic behavior here refers to any intentional deception as to the organic quality of the product. It includes the application of prohibited substances, as well as not following other organic production, processing, and transportation practices. There are three structural alternatives to managing this interdependency, which are described in Table 4.

Table 4: SSP: Preventing Opportunistic Behavior

Situation	Structure	Performance
Good: organic produce Situation: high information cost Actors: Consumers Producers Intermediaries Interdependency: How to ensure product is organic.	1. Rely on trust and social ties developed through repeated transactions. 2. Employment contract. 3. Third party certification.	1. System works best with small personal transactions so small-scale producers have relative advantage. 2. Threat of being fired with monitoring and testing of final product provides incentive for employees to meet standards. Some will cheat. Results in greater vertical integration. 3. Effective if testing can determine if standards are being met. Because of high costs, larger firms with economies of scale have relative advantage. Also must monitor the certifier.

One way to prevent opportunistic behavior is to rely on social capital. In other words, to trust that the social ties between transacting parties will prevent them from what would be perceived as dishonest behavior. In order for this to be successful, the parties must seek out trustworthy partners and have established social ties. This structure is most successful with small personal transactions.

Another method of assuring product quality at different points of transaction is through employment contract. Market actors that have a contract with another firm and know that

their product is being tested and monitored have an incentive to follow the organic standards or risk having the contract voided. However, due to the unpredictability of human behavior, this will not hold true for all actors, especially if it is difficult to test the end produce or to trace an infraction to a specific employee. Therefore, under this structure, there is still a need to rely on either social capital, or a third party inspection system.

Third party certification is the third structural alternative. If the quality of the end product can be determined through testing, then this could be an effective, but relatively costly alternative. As previously discussed, organics is a process claim defined by the technology and inputs used. South African certifiers interviewed for this study state that with the use of monitoring and testing, they can determine to an absolute certainty whether a producer is following organic standards. The question then arises as to who monitors the certification body. Organizations such as IFOAM, the US Department of Agriculture (USDA) and the European Union have all adopted a system of accrediting (or certifying) and monitoring certification bodies.

Due to the high costs of this alternative, larger producers with economies of scale have a relative advantage. One way for small-scale producers to overcome this relative disadvantage is to form groups to obtain certification. Some certification bodies such as Société Générale de Surveillance (SGS) have established formal organic standards specifically for smallholder groups (SGS 2002). Other certification bodies do not have specific group certification standards but require that smallholder groups have a written constitution that specifies an internal quality control system to ensure the standards are being met.

There has been much contention over whether organic standards should require external inspection by a certification body of every member of a smallholder group, or whether a random inspection of a certain percentage is adequate. As Kortbech-Olesen, a Senior Market Development Adviser at ITC asks, "Are we prepared to pay, say, 30 percent more for an inspection that can make us not only 95 percent, but maybe 99 percent sure of organic origin" (Kortbech-Olesen 2000)? Currently in South Africa, most certification bodies that grant group certification require an annual random external inspection of 10 – 25 percent of the group. However, every producer must undergo an annual internal inspection by a member of the group who has received organic inspecting training (Callear 2002; SGS 2002). There has been an attempt to reduce conflict of interest of the internal inspectors, but it is in their best interest to be strict or they run the risk of losing the certification for the group as a whole. However, social circumstances may make it difficult to sanction other group members, and this is a cause of concern for some in the organic market.

This internal inspection system is part of the internal quality control system that must be established in order to receive group certification. As the cost of internal inspection is lower than external inspection smallholder groups are able to benefit from certification at a reduced cost. However, the internal quality control system requires organizational and technical knowledge, which may not be available to the group, and could therefore serve as a barrier to small-scale producers unless they have access to outside assistance.

2.2.3 Hypotheses

The following hypotheses will be tested using the SSP framework:

Hypothesis 1: Due to the requirements of the supermarkets, small-scale producers can best enter the organic market through an intermediary.

Hypothesis 2: As a result of high information costs in the organic market, where there is a deficit of social capital, or trust, there is a tendency towards vertical integration and formal contracting between parties throughout the marketing chain.

The hypotheses above are tested by studying three case studies of small-scale producer groups or individuals that have gained access to the organic market through three distinct marketing channels: direct marketing, association and joint venture.

2.3 Why Case Study Analysis?

Due to the dearth of information on small-scale producers' decision-making on the adoption of organic production, this study is an exploratory study. As such, case study research provides an excellent tool for data collection. Case study research can be used to gain insight into understanding the context and, at the same time, to collect specific data on specific producers. Understanding the context of the question is particularly important when addressing policy-oriented questions. According to Yin, case studies can be used when the research questions require a focus on the present time frame, and when the researcher believes the context is important to the phenomenon but the contextual variables cannot be controlled. Case study research can be used to answer "how" and "why" questions that are not as easily addressed with quantitative methods (Yin 1994). It is for these reasons that case study research methods will be applied in this study. Case study research has one of three objectives: a) develop new theory; b) test existing theory;

or c) conduct applied problem-solving research (Sterns, Schwekhardt et al. 1998). This study will conduct applied problem-solving research.

Robert Yin argues that case studies are generalizable to theory and not to a population. For this reason, he does not attempt to select case studies to be "representative" of the population (Yin 1994). On the other hand, Mary Kennedy, who primarily used case study research in project evaluation,

> . . . Contends that the validity of non-statistical inferences (i.e., generalizations) can be enhanced when three criteria are met: (1) there is a wide range of attributes across the sample cases, (2) there are many common attributes between the sample case(s) and the general population of interest, and (3) there are few unique attributes within the sample case(s). . . . The third criterion recognizes that the degree of unique attributes in a sample case and the validity of generalizations are inversely related (Kennedy in Sterns, Schwekhardt et al. 1998).

For this reason, purposeful targeting was employed when selecting cases for this research. The cases selected controlled for size category (small at less than 10 hectares), socio-political status of producers (previously disadvantaged), and "industry effect" (all cases are of mixed vegetable producers), all of which are common explanatory variables in studies of market access. The three cases selected vary in their internal structure: Joe Mpuru is an independent producer who marketed directly to the retailer, The Ezemvelo Farmer's Organization is a cooperative that markets through a packager that serves as a intermediary, and Go Organic is a joint venture with Spier, a winery that provides support to the group. These cases were selected because they represent three distinct options of

how small-scale producers can organize themselves to gain access to the organic market, and thus should provide information on the range of incentive and capacity variables important in the decision by small-scale producer to enter the organic market. These three structures are also important to the institutional analysis, as we see below.

Questions are often raised about how results of case study research can be interpreted. Differences between cases can be documented, but how can the significance of these differences be determined? It is important to note that even in a statistical interpretation, significance is relative and depends on the significance level selected by the researcher. McCloskey stresses the importance of differentiating between statistical and substantive significance. With statistical significance, "the elementary but neglected point is that statistical tests of significance are merely about one sort of unbiased error in *sampling*" (McClosky in Sterns, emphasis in original). Substantive significance determines "whether a fitted coefficient is large or small in an economically significant sense" (McClosky in Sterns). The economist must independently determine substantive significance. Therefore, to interpret the results of case study analysis, comparisons should be made between cases, differences should be noted, and patterns should be sought. When there are consistent and systematic differences between cases or categories, these should be reported (Sterns, Schwekhardt et al. 1998).

This study will use a single unit of analysis for the case studies: the transaction between the market actor and the buyer. If the small-scale previously disadvantaged producer is an independent actor in the market then s/he is the unit of analysis. However, if a group of small-scale producers act as one unit in the market, then the group is the unit of analysis. The structure of the case study analysis can be found in Table 5.

Table 5: Structure of Case study analysis

Category:	Name	Mixed Vegetable Grower
Independent producer	Joe Mpuru	Case 1
Cooperative/Association	Ezemvelo Farmer's Organization	Case 2
Joint venture	Go Organic	Case 3

Information was gathered for the three case study subjects through semi-structured interviews with producers. For triangulation, semi-structured interviews were also conducted with key informants in other sectors of the organic market including packagers, wholesalers, buyers, retailers, exporters and certifiers. Semi-structured interviews were also conducted with other actors such as the South African Department of Agriculture, organic associations, and other NGO's and individuals active in the organic sector that at times provide support to the small-scale producer within the organic marketing chain.

CHAPTER THREE: STUDY CONTEXT

The organic produce market in South Africa is in its infancy, but it has great potential for growth. The total farm gate value of organic production in 2000 in South Africa was estimated at US$5.47 million, of which, approximately 95 percent is exported (van Zyl 2000).

There is reason to expect further growth in South Africa's domestic organic market. Demand still far exceeds supply according to retailers (Everett 2002; Hartmann 2002). In Woolworths consumer survey, 71 percent of respondents cited the lack of availability as an obstacle to purchase (Du Toit and Crafford 2001). Also, the Environmental Kuznet's curve indicates that as the average income increases, so does environmental awareness. Therefore we would predict that as the per capita GNP in South Africa increases, demand for organic products will also increase.

3.1 Why small-scale producers enter the organic market

To date there has been little research on the factors affecting the entry decision of small-scale producers into the organic market. The first step for a producer to enter the organic market is to adopt organic production practices, and there has been a particular lack of research on the reasons why producers adopt organic production practices. One exception to this is the HDRA report that suggests relevant factors to organic adoption which include: access to and cost of fertilizers and pesticides (which respectively have negative and positive relationships with organic adoption); availability of organic inputs such as manure, crop residues, and weeds; level of intensification of the agricultural system (negative relationship); labor; environmental concerns; land size and ownership;

access to credit markets (positive relationship with fertilizer use), and knowledge of organic practices (Harris, Lloyd et al. 1998).

A possible explanation for this lack of research on the producer decision to adopt organic production practices is that there is a widely held assumption that many producers are "organic by default", and therefore do not consciously make this decision. There is much conflicting anecdotal evidence supporting or refuting the idea that small-scale producers in Africa are "organic by default". Some of those who support this argument appear to base their assumption on a narrow definition of "organic" limited to the lack of agro-chemicals in the production system. For example, according to the Commission on Sustainable Development, of the Department of Economic and Social Affairs of the United Nations, in developing countries, much of agriculture is done without the use of synthetic inputs, and in such it is organic, but without certification (Commission on Sustainable Development 2000). The correct definition of "organic" is generally understood to be a set of production practices, and not simply the rejection of agro-chemicals. According to the USDA National Organic Program,

> Organic farming systems focus on biological and cultural methods for pest management and use organic processes such as green manure, . . . animal manure, compost, and crop rotation to provide the major source of crop nutrients. These systems virtually exclude the use of synthetic pesticides and fertilizers (National Organic Program 1997).

In addition, the assumption that many small-scale producers do not use agro-chemicals may be false. HDRA found that, "The use of agro-chemicals is widespread among farmers in Sub-Saharan Africa, with only a minority of farmers practicing unimproved

traditional subsistence agriculture" (Harris, Lloyd et al. 1998). The survey was conducted of NGO's that work in community development, and not of the farmers themselves, therefore, there may be bias in their findings on producer issues. The report also states,

> Although isolated . . . soil fertility management and crop protection practices of a non-chemical nature . . . are sometimes practiced, there was a general lack of an integrated approach to soil fertility and crop protection management, and under-exploitation of the full range of techniques that would maximize the benefits of locally available natural resources (Harris, Lloyd et al. 1998).

That said, some small-scale producers in developing countries do practice production methods that meet the requirements of organics. According to Gunnar Rundgren, current President of the International Federation of Organic Agricultural Movements (IFOAM), organic agriculture integrates traditional knowledge and select modern technologies into an ecologically intensified system (Rundgren 2002). A recent IFOAM report notes,

> Many African farmers have remained loyal to the long tested traditional agriculture practices, adopting and adapting conventionally-developed technologies to fit into their farming systems. This has resulted in dynamic farming systems that combine traditional farming technologies and practices with what is best from conventionally developed technologies. It is these types of traditional farming systems that render themselves to rapid organic conversion (Walaga).

Therefore, producers using adapted traditional production practices may find it easier to meet certification standards on organic production practices compared to conventional commercial producers. While these producers may find it easier to meet the organic production standards, two points need to be made. First, the assumption should not be made that all small-scale producers are currently practicing adapted traditional production practices that comply with organic standards because this is not the case. Second, even if the current production practices of small-scale producers can be certified, this does not guarantee entry into the organic market. These producers still face the difficulty of marketing their organic produce. This point will be discussed in the following section.

3.2 How small-scale producers enter the organic market

Given that the main retailers of organic produce in South Africa are the supermarket chains, it is of great benefit to the small-scale producers in the domestic organic market to be able to participate in these supply chains. However, if producers cannot link into these supply chains it could serve as a barrier to entry into the organic market. Organic sales through supermarkets is the fastest growing distribution channel in most markets (FAO, CTA et al. 2001). The goal of the supermarket chain is to provide their customers with high-quality low-cost safe food. In order to achieve this, supermarket chains require that their suppliers meet both organic and quality standards and at the same time that they provide a consistent volume and variety of products at a low cost.

The organic standards are enforced by requiring that producers obtain organic certification before they can supply organic produce. While the South African national regulations have not yet been finalized, all the major supermarket chains already require

that their suppliers obtain organic certification before they can supply any organic produce. The costs of certification must be borne by the producer. Certification can be obtained from either an international certifier that certifies to international standards, or by one of the two South African certifiers, which certify to the proposed regulations, and at the moment certify only for the domestic market. Unless producers can obtain certification, they are currently limited to selling their produce to small supermarkets, health food stores, farm stalls or markets, and box schemes. The demand for organic produce from these outlets is quite small, and therefore, without certification, organic producers have limited market access. Once the national regulations are finalized, producers will no longer be permitted to sell organic produce anywhere without certification, which could provide a barrier for entry into the organic market by some producers.

According to the Commission on Sustainable Development, if the hurdle of certification in developing countries can be overcome, there is potential for supplying the domestic market, and ultimately, the export market. The Commission suggests that small-scale producers could form cooperatives and associations to overcome this hurdle (Commission on Sustainable Development 2000). However, once the hurdle of certification is overcome, there are other obstacles that must be overcome to successfully market organic produce. These issues will be further discussed below. There have been examples where these obstacles of certification have been overcome in other parts of Africa. For example, the International Trade Center (ITC) recently initiated a project in Ethiopia to establish a national domestic certification body as up to 90 percent of coffee

producers are smallholders that are essentially already using organic production techniques (Kortbech-Olesen 2000).

Supermarket chains also have very strict quality requirements for produce that must be met by organic produce suppliers. These include specific packaging, transportation, size, sanitary and phitosanitary and overall quality requirements for produce. According to both Phil Hartmann of Woolworths, and Conal Everett, Technologist in the Produce Division at Pick n' Pay, small-scale previously disadvantaged producers can produce a quality organic product (Everett 2002; Hartmann 2002). In fact, James Hartzell, owner of H2A Botanicals, an organic farm and packhouse, notes that knowledge of organic farming practices is one of the advantages of the small-scale previously disadvantaged producer in the organic market in South Africa (Hartzell 2002). Small-scale producers encounter difficulties entering the organic market in the marketing area, such as access to packaging and maintaining the cold chain.

In interviews with supermarkets, packaging was often cited as a problem in working with small-scale producers. Both Woolworths and Pick n' Pay require that all organic produce be delivered to them in its final packaging in order to prevent contamination or intermingling with conventional goods. Therefore all producers in the marketing chain must have access to packaging or to an intermediary that has packaging facilities.

A further problem faced by small-scale producers in the organic market is in maintaining the cold chain. Most produce must be transported to retail centers at below 5 degrees Celsius. However, some produce, such as tubers, do not need refrigeration and can be transported in ambient temperatures. According to Hartmann, it is not cost effective for

small-scale producers to have refrigerators in the packhouse or trucks to maintain the cold chain, and thus the quality of the product. Therefore, small-scale producers do not have access to the infrastructure to maintain product integrity (Hartmann 2002).

Supermarket chains also often cited the problem of continuity of supply in dealing with small-scale producers, although they noted that this was a problem with all their organic suppliers (Everett 2002; Hartmann 2002). A possible explanation for this is that most large-scale organic producers in South Africa export their produce, so domestic supermarkets buy from mostly small-scale organic producers. The supermarkets require both continuity in volume and variety of a product. By receiving a consistent and relatively large required volume and variety of product from each supplier, the supermarket chains reduce their transaction costs in buying organic produce.

The goal of the supermarkets in the organic market is to meet customer satisfaction by maintaining product identity throughout the marketing chain while keeping the price of the organic product as low as possible. The additional information that must be collected by supermarkets in the organic sector to maintain product integrity as the product moves through the marketing chain results in additional transaction costs. Since information costs are generally lower within a firm, one would expect to find increased vertical coordination and integration within this market. Spears notes,

> The greater the need to increase product quality, the greater the incentive for the firm or agri-food system to coordinate vertically, allowing greater control over the stages the food passes through before reaching the final customer (Spears in (Farina and Rezende forthcoming).

Therefore, the key to successful participation in the organic market in South Africa by the small-scale producer revolves around the question of how the producer can overcome the above hurdles, and gain access to the supermarket marketing channel. This study will present case studies of three different ways in which small-scale producers were able to enter the organic market.

CHAPTER FOUR: ADOPTION MODEL

A three-step adoption model is used in this analysis. The first step will address the question of adoption of organic production techniques. The second step will address the question of adoption of organic certification, and the third step will address the question of adoption of organic marketing, or the decision to enter the organic market.

4.1 Adoption of organic production techniques

4.1.1 Joe Mpuru

Jonas Mpuru is a 48-year-old producer who has been growing a mix of organic vegetables in the heart of the Soweto Township outside of Johannesburg since 1998. He farms vegetables using organic production practices on the former playing field of an unused school, the Nenscol Technical Center. Mr. Mpuru learned these production techniques from his father who farmed using traditional methods. These traditional methods did not include the use of composting, however they did include manure, crop rotation, fallow periods, and integrating crop residues to maintain and build their soil fertility. Mr. Mpuru has adapted these traditional methods by adopting the use of composting, green manure, and mulching which he learned from the Agricultural Research Center (ARC), and from training with the Food Garden Foundation (FGF), an NGO that promotes small home gardens to improve household food security.

Mr. Mpuru is a producer who is essentially "organic by default". He learned the traditional production practices in his homeland in Skukuniland and has since adapted those practices to incorporate other organic techniques. Therefore, Mr. Mpuru never

truly faced the decision to adopt organic production practices. However, Mr. Mpuru maintains that he uses organic production practices because it is the traditional way and for health reasons. Mr. Mpuru believes that the use of agrochemicals has negative health effects.

4.1.2 Ezemvelo Farmer's Organization

The Ezemvelo Farmer's Organization (EFO) was established in March 2001 in Ogagwini, KwaZulu-Natal. EFO is comprised of 30 members whose individual areas of cultivation range from 0.1 hectares to 5 hectares, with most plots between 2 -3 hectares. The group was formed by local subsistence farmers with support from Albert Modi, a professor at the University of Natal. The motivation for forming the organization was to market traditional crops that are organic by default, but had no formal market. The goals of the organization are to produce and market vegetables with organic farming methods, to enhance the level of the subsistence farmers to that of commercial farmers, and to decrease poverty (Modi 2002).

The crops marketed by EFO are mdumbe (taro), sweet potato, and Zulu white potato. These traditional crops were selected because the producers believe that the production of these crops without the use of pesticides or herbicides results in a better product. There is a common belief among the farmers that using fertilizer on these products makes the end product watery and not viable for storage. Unlike many small-scale previously disadvantaged producers in South Africa, this group has never been removed from their land, so members of the EFO have been farming on this land for generations using traditional farming methods. They therefore have a large knowledge base of traditional

production practices that has been passed down through the generations. The small-scale producers in EFO did not change their traditional production practices to become certified, and as such could also be considered "organic by default", and they also never faced the question of adoption of organic production practices.

4.1.3 Go Organic

Go Organic is a stand-alone firm producing organic vegetables that is run by its shareholders, which include previously disadvantaged producers and the Spier Wine Estate. The Spier estate was purchased in 1993 by a group of shareholders who envisioned a farm, winery and hotel and that would be able to provide the local community with employment and a place to live. Spier follows triple bottom line accounting: financial, social and environmental. As a result, the priorities of the firm extend to black empowerment and good natural resource management (Moffett 2002). Early in the development of the estate, Spier identified organic agriculture as a way to earn a profit while meeting their social and environmental goals.

The land for Go Organic is subleased by the firm from Spier, who leases the land from the provincial government. The shareholders obtained a loan from KHULA, a development organization, to float Go Organic. The farmers who work the land are employees of the firm, Go Organic, but Spier also wanted to give the people who work on the estate a stake in the firm, and today seven of the employees of Go Organic own a 27.5 percent share in the company, with the remaining share owned by Spier. Go Organic employees have the option to purchase shares in the future until they are the

majority shareholder (Stone 2002). To date, the shares do not have any value, as Go Organic has not yet made a profit (Hendriks 2002).

To develop the organic sector of the estate, Spier identified five farmers, provided them with eighteen months of training, and started producing organic vegetables. There are currently 48 previously disadvantaged farmers working for Go Organic including a CEO and two managers. Many of these producers had little experience with organic farming before they came to Spier. Go Organic was created to fill the gap in the domestic certified organic market in South Africa. The question of adoption of organic production practices was therefore closely tied to the market entry decision. That said, Spier opted for the organic market because of the good market potential but also because of the positive impact of organic farming on the natural environment and the safe working environment for their employees.

4.1.4 Summary

In the case of Joe Mpuru and EFO, the producers have always used organic production practices and thus could be considered organic by default. These producers did not face the adoption decision. However, Joe Mpuru did note that the health benefits of organic produce play a role in his decision to maintain organic production practices.

In the case of Go Organic, the decision to adopt organic production practices was closely tied to the decision to enter the organic market in order to fill the gap in the market. However, the positive environmental effects of organic production practices and the safe working environment were also important factors in the decision to enter the market.

4.2 Adoption of Organic Certification

4.2.1 Joe Mpuru

Mr. Mpuru is not certified for organic production. In 1998 Mr. Mpuru was trained by FGF in their method of organic production. During this period, FGF established organic market access for Mr. Mpuru with Thrupps, an upscale supermarket in Johannesburg, which paid Mr. Mpuru a higher price for his product than he could otherwise obtain. Thrupps did not require certification, but instead relied on the reputation of FGF when they stated that the products were organic. In January 2002, Mr. Mpuru ended his relationship with FGF because of a dispute over his role in the FGF organization. Mr. Mpuru felt that his fields were being used by FGF as their main demonstration site for donors, and that he was not receiving adequate compensation for this service. As a result of ending his relationship with FGF, Mr. Mpuru lost his market with Thrupps, and has had to return to selling his organic produce in the informal conventional market at a lower price. The adoption model should provide insight into why Mr. Mpuru has not opted for certification.

$$Z_2 = f\ (\bar{x}_{14}, \bar{x}_2, \bar{x}_3, x_{15}, x_4, y_3, y_4, y_6, y_7, y_8)^{+\ +\ +\ +\ +\ +\ +}$$

We would expect the variable representing the difference in income before and after certification (x_{14}) to be insignificant in this case because it is unclear whether there would be a change in income after certification if Mr. Mpuru has access to the organic price premium without certification. Mr. Mpuru is able to access informal conventional markets by selling his produce to community members who come to the property and buy

directly from him, and also by selling his produce at the bus terminal market in Soweto. Mr. Mpuru does not have access to the formal conventional market (x_2), or the formal organic market that requires certification (x_{15}). However, he did have access to a formal organic market that did not require certification (x_3). Under such circumstances, we would expect these marketing options to have a negative effect on his decision to adopt certification. However, since his relationship with FGF ended, he has been unable to access the organic market. His lack of access to both the formal conventional market and the formal organic market without certification, should have a positive effect on Mr. Mpuru's decision to adopt organic certification.

In this case land tenure (x_4) is expected to have a positive effect on adoption of organic certification. Although Mr. Mpuru has no title or rental contract for the use of the land, he states that he feels secure in his future use of the land, and therefore, we must assume that his decisions are based on this sense of tenure security. Mr. Mpuru has a verbal agreement with the municipality that he would clear the land and maintain the property in exchange for his use of the land. As this is a mutually beneficial relationship, he feels that there is no reason why either side should alter the arrangement.

Mr. Mpuru does have access to credit (y_3) through the Land Bank, however, he is unwilling to enter into debt because he has no other employment option and does not want to risk defaulting if his crop should fail. Mr. Mpuru has knowledge of organic farming practices (y_4) from his experience with traditional agriculture, from FGF training, and from contact with the ARC. While Mr. Mpuru was working with FGF (y_7), they provided him with assistance in gaining access to an organic market and through subsidized transport. However, they did not provide him with any information on

certification or suggest others who might be able to assist him. Mr. Mpuru does not have social connections (y_8) with other commercial farmers. He therefore has no access to information on certification from a social network.

Mr. Mpuru stated that he has no knowledge of certification, its purpose, or where to go to obtain information on certification. As such, he had no access to certification (y_6).

4.2.2 Ezemvelo Farmer's Organization

EFO is currently in the process of obtaining certification. The group is currently certified "in-conversion" by Afrisco, who in this case required a one-year conversion period before it would inspect for full organic certification. The period was shortened from three years because it was determined that the producers in the group had been using production practices that met with organic standards in the previous two years. The group is now working towards financing the inspection by Afrisco that will grant them full organic certification. EFO sell their produce to H2A Botanicals, an organic farm and packhouse, which packages the produce and sells it to Pick n' Pay. Certification is required to supply produce to Pick n' Pay, and in order to obtain group certification, Afrisco required that the farmers form an official organization with a constitution, a governing body, and a system of internal inspection. The adoption model should provide insight into what factors led to the decision to obtain certification.

$$Z_2 = f\ (\bar{x}_{14}, \bar{x}_2, \bar{x}_3, x_{15}, x_4, y_3, y_4, y_6, y_7, y_8)^{+\ +\ +\ +\ +\ +\ +}$$

Members of EFO have higher profits after certification than they did before (x_{14}). This is because of the higher price that they receive for their certified product and the larger volume that they are able to sell because of their access to the formal certified organic market. Before joining EFO, one member of the group earned R1000 (US$98) per year and now earns R2400 (US$236) per year. These higher revenues more than cover the additional costs of inspection and certification of R8000 (US$800) per year (Callear 2002). EFO does not have any loans and does not face higher costs of marketing in the organic market because they receive subsidized transportation from the local Department of Agriculture office. EFO would not have access to their organic market without certification (x_{15}) due to the requirements of their buyer. They also do not have access to other markets, conventional (x_2) or organic without required certification (x_3). Prior to marketing to H2A Botanicals, the producers in EFO only had access to informal conventional markets through sales to hawkers or laborers. Given that the only formal marketing option open to EFO is in the certified organic market, we would expect this to have a large positive effect on the certification decision.

The members of EFO do have access to credit (y_3), although they are unwilling to take advantage of the resource. They also have access to certification (y_6), which came about because of the outside influence of Modi and Auerbach (y_7). These two individuals, and Hartzell, the owner of H2A Botanicals, have provided various forms of assistance to the group. This support includes information on organic production practices, certification, and market requirements, assistance in obtaining subsidized transportation, assistance establishing the system of internal control for certification, and marketing services. The group obtained further information on organic production practices (y_4) from older

members of the community who farmed using traditional production practices. Members of the group did not have social networks (y8) that assisted them on gaining access to organic certification.

4.2.3 Go Organic

The original 20 hectares of Go Organic obtained full organic group certification from Ecocert in 2000. Since that time, the conventional vegetable production firm at Spier has been incorporated into the Go Organic firm. Of the former conventional area, 8 hectares are now certified in-conversion, and the remaining two hectares are grown conventionally. The profits from the conventional production are used to subsidize the organic production during the conversion period (Moffett 2002). Go Organic sells their produce to Dew Crisp, a packhouse that is another joint venture of Spier and is located on the neighboring property.

The application for certification was made by Go Organic immediately after its formation. The adoption function for certification is as follows:

$$Z_2 = f\ (\underset{-}{x_{14}}, \underset{-}{x_2}, \underset{-}{x_3}, \overset{+}{x_{15}}, \overset{+}{x_4}, \overset{+}{y_3}, \overset{+}{y_4}, \overset{+}{y_6}, \overset{+}{y_7}, \overset{+}{y_8})$$

The income difference between certified and non-certified production (x_{14}) is difficult to determine in this case because Go Organic was created to be a certified organic firm and therefore never operated in the uncertified market. It is difficult to hypothesize what price the firm would have received for its produce had they not obtained certification because it is unclear whether they would have been able to gain market access to the conventional market. The additional costs that Go Organic faces because it has opted for

the certified market include the cost of certification at R15,000 – 20,000 (US$1,500 – 2,000) a year for the 28 hectares, the cost of credit, and the cost of marketing the product. As Go Organic sells most of their produce to Dew Crisp, they do very little of their own marketing and the costs of transportation to their buyer are negligible.

Go Organic opted to obtain certification upon formation because their desired market required certification (x_{15}). Go Organic sells their produce to Dew Crisp, which sells 90 percent of its produce to Pick n' Pay and Woolworths and the remaining 10 percent through a small box-scheme, cash sales, and a farmer's market (Moffett 2002). It is doubtful whether Go Organic would be able to find an adequate market in the non-certified organic market (x_3) given that supermarkets require certification and they are the largest domestic buyers of organic produce. The conventional produce market in the Western Cape is highly competitive and the managers of Go Organic expressed that they did not feel that the firm would have been able to compete in the conventional produce market (x_2) (Hendriks 2002; Stone 2002).

Go Organic has secure land tenure (x_4). Spier leases the land from the municipal government on a 30-year lease, and Go Organic subleases the land from Spier at a cost of R8,000 (US$800) per month. Go Organic also has had access to credit (y_3) for the purchase of inputs and from the government for the training of the original five farmers, as well as the original loan from KHULA. They have also received support from the Spier holding company. Spier provides financial support when Go Organic is unable to cover its expenses. As of May 2002, Go Organic had received R500,000 (US$50,000) from Spier. Discussion is underway as to whether this will be a grant or a loan. Spier has provided this support to conform to the triple bottom line accounting practices;

however, Spier has a goal that all joint ventures should be self-sufficient after an establishment period. Therefore, these subsidies may no longer be available to Go Organic in the near future.

Go Organic obtains information on organic production practices (y_4) from various sources. The CEO of the firm, Gerrit Hendriks, had previously worked on an organic farm and thus already had knowledge of organic production practices. They also obtain information from talking to other farmers, from the internet, from an organic consultant, and from organic courses at Spier or at Elsenberg, a government farm that started offering organic training courses in 2002. Despite their many sources of information, the farmers of Go Organic felt that there is a lack of information available on organic methods (Hendriks 2002).

The role of Spier as an outside influence (y_7) has been instrumental in the establishment and the continual development of Go Organic. Spier has provided them with direct assistance in the form of loans, grants and machinery, and has also helped the small-scale producers gain access to land, credit, information, certification (y_6), and marketing. The social networks (y_8) of the individual producers have not played a role in their access to resources; however, the social networks of Spier and its employees have served this purpose.

4.2.4 Summary

As hypothesized, these cases indicate that market access is an essential factor in the decision to obtain certification. Market access can serve as both an incentive, when the desired market requires certification, and a disincentive, when a producer has access to an

organic market, and the price premium, without certification. Access to the organic market can increase profit because of the price premium, but also, because there is currently excess demand for organic produce in South Africa, producers may find it easier to expand their market and increase the volume of sales in the organic market than in the conventional market.

The cases also support the hypothesis of the importance of the role of the outside influence. The decision to adopt organic certification was directly influenced by an NGO, a certification body, or an individual in all three cases. In the case of Mr. Mpuru the lack of information on certification provided by an outside influence directly resulted in his decision not to adopt certification. The outside influence provided direct and indirect subsidies to the different producer groups including information on organic production practices, certification, and market requirements, assistance in obtaining subsidized transportation, assistance establishing the system of internal control for certification, and marketing services. Go Organic also received direct financial subsidies from the Spier estate. The social network of the producers was not a factor in the decision to adopt certification in these cases because the producers had no social contacts with others involved in the formal agricultural market or in the organic market.

Go Organic noted that there was a lack of information on organic production methods. It is important to note that this problem is found throughout the organic market and is not specifically a problem of the small-scale producer.

4.3 Participation in organic marketing channels

4.3.1 Joe Mpuru

In early 2002, Mr. Mpuru was forced to exit from the organic market and to sell his produce once again in the informal conventional produce market. Prior to that date, FGF had provided subsidized transport for weekly delivery of Mr. Mpuru's produce to Thrupps. At the time that Mr. Mpuru renounced his membership from FGF, he lost both his subsidized transport and his market, because FGF had developed the relationship with Thrupps and Mr. Mpuru was not directly involved in these marketing arrangements.

$$Z_3 = f\ (\underset{-}{x_{22}}, \underset{-}{x_2}, \overset{+}{x_3}, \underset{-}{x_{15}}, \overset{+}{y_3}, \overset{+}{y_8}, \overset{+}{y_9})$$

When Mr. Mpuru was selling his produce to Thrupps and was receiving the organic price premium, his monthly wage was R6,000 (US$590). Once he returned to supplying only the conventional market, his monthly wage has decreased to R3,000 (US$295). This is a loss in income of R3,000 (US$295 month). The difference in income is a factor of the higher price received in the organic market, the higher volume sold in the formal market, and the cost of marketing. The cost of transportation, which in this case was a factor of distance because there is no local market for organic produce in Soweto, was particularly significant for Mr. Mpuru. FGF charged Mr. Mpuru a subsidized rate for transportation of R60-80 (US$5.90 – 7.90) per delivery compared to R120 (US$11.80) without subsidy. When participating in the informal conventional market, Mr. Mpuru's transportation costs are negligible. This large difference in income is particularly significant because

we would expect income to have a relatively large effect on the decision to enter the market.

Mr. Mpuru currently does not have access to the formal conventional market (x_2) or the certified (x_{15}) or uncertified (x_3) organic market. He is currently only selling his produce in the informal market. We would expect the potential for higher income in the formal markets to serve as an incentive for him to enter the organic market or the formal conventional market. Additional incentives for entry into the organic market are the price premium and the situation of excess demand that currently characterizes the market.

As hypothesized, the presence of an outside influence (y_7), FGF, did help Mr. Mpuru enter the organic market by providing him support in finding a buyer, and by subsidizing transportation (y_9). Mr. Mpuru's social network (y_8) did not ease his access to other capacity variables. Mr. Mpuru did have access to credit (y_3); however given his unwillingness to utilize this resource, this variable is not significant.

4.3.2 Ezemvelo Farmer's Organization

According to Modi, the producers in EFO were not working towards entry into the formal market before he became involved in the group. His suggestion helped them to realize that they *could* enter the formal market, and specifically, the formal certified organic market, given that they were already using organic production techniques. Members of the group stated that they thought that only large-scale white farmers could market their produce to retailers.

$$Z_3 = f\ (\underset{-}{x_{22}}, \underset{-}{x_2}, \underset{+}{x_3}, \underset{-}{x_{15}}, \underset{+}{y_3}, \underset{+}{y_7}, \underset{+}{y_8}, \underset{+}{y_9})$$

The members interviewed indicated that they had started selling their produce to H2A Botanicals because they wanted to earn more money (x_{23}). Group members have experienced a significant increase in income, which clearly serves as an incentive for joining the group and entering the organic market. This difference in income results from the higher price obtained in the organic market, and the larger volume that they are able to sell in the formal certified organic market (x_{15}), because of their inability to access formal conventional markets (x_2) or uncertified organic markets (x_3). The group did not face any additional organic marketing costs because the Umbumbulu office of the Department of Agriculture provides the group with transportation of the produce at no charge (y_9). The Department of Agriculture comes to the group weekly to transport the produce directly to H2A Botanicals. The group also did not face any conversion costs (x_{15}) as they maintained their production practices.

The group did have access to credit (y_3) but did not want to utilize this resource. In their role as outside influence (y_7), Modi, Auerbach, and Hartzell had a large impact on their decision to enter the organic market. Modi provided the initial motivation and both Modi and Auerbach helped them organize into a group and obtain certification. Hartzell assists the group with marketing their produce. The group did not have any social network (y_8) that helped them gain access to the organic market.

This case also presented another relevant variable in entry into the organic market: packaging. The large retail chains all require that their suppliers deliver organic produce in its final packaging in order to decrease the possibility of contamination or mixing of organic and conventional produce by the retailer. Therefore, without access to H2A

Botanicals' packaging facilities, these small-scale producers could not access the retail market.

4.3.3 Go Organic

Go Organic was formed to fill a gap in the certified organic market. In other words, the organization was created to enter the organic market.

$$Z_3 = f\ (\underset{-}{x_{22}}, \underset{-}{x_2}, \underset{+}{x_3}, \underset{-}{x_{15}}, \underset{+}{y_3}, \underset{+}{y_7}\ \underset{+}{y_8}, \underset{+}{y_9})$$

Hendriks stated that Go Organic opted to enter the organic market because they saw a gap in the market and also because of the potential to earn higher profit (x_{22}). The only additional cost to entering the organic market is the additional cost of marketing the organic product and the cost of certification. As stated in the previous section, these marketing costs are minimal for the Go Organic group because Dew Crisp manages the marketing of the produce and they have no transportation costs to deliver their good to the packhouse. To date, Go Organic has not been able to maintain profitability, which has been blamed on the reduced yields of the conversion period.

While the firm does have access to the conventional market (x_2), they do not feel that they would be able to compete in that competitive market. However, if Dew Crisp rejects produce from Go Organic, the rejected produce is sold in the conventional market. They therefore have access to both markets. At the formation of the firm, they set a target to supply the upscale supermarkets that require certification (x_{15}). Go Organic also has access to credit (y_3), and transportation (y_9) through the assistance of Spier (y_7).

4.3.4 Summary

As hypothesized, it appears that income is the driving force for entering the organic market. In the case of Mr. Mpuru and EFO, their incomes were significantly increased after entry into the organic market. In the case of Go Organic, the motivation for entering the market was the potential for increased profit, however as yet the firm has been unable to achieve consistent profits. Go Organic expects that once the conversion period is completed, their yields will begin to increase and they will see an increase in profits.

Packaging is identified as a key variable in entry into the organic market. Currently in South Africa it is the supermarkets that require both certification and final packaging upon delivery. However, the proposed national regulation states that,

> Products covered by these regulations which are not in final packaging may be transported to other premises only in appropriate packaging or containers which are adequately labeled and identified to include all of the following:
> (a) the name and address of the person responsible for the production or preparation of the products; (b) the name of the product; (c) the certification carried by the product; and (d) an indication specifying that the product is covered by regular inspection arrangements of an approved certifying organization (Department of Agriculture 2001).

While the proposed regulations do not specify that the product must be in final packaging from farm gate, the cost of following the above rules are comparable to the cost of putting the product in final packaging. Clearly, once the final regulations are enforced, access to packaging could become an even greater problem for small-scale producers.

CHAPTER FIVE: INSTITUTIONAL ANALYSIS

This chapter will present two institutional analyses of the organic market in South Africa using the SSP model. First, an analysis of how alternative marketing arrangements impact small-scale producers in the organic market. Second, an analysis of how alternative structures between transacting parties can minimize the risk of opportunistic behavior in the environment of high information costs in the organic market.

5.1 Marketing options

5.1.1 Joe Mpuru

Joe Mpuru is an independent small-scale producer who attempted to market his organic produce directly to the retailer. He was successful in the short run while he received subsidized transportation and market assistance from FGF, but in the long run, without these subsidies, he was not able maintain his market access. He encountered difficulty because of the high transportation costs and his lack of marketing skills. It is important to note that because Thrupps does not require certification and does not have strict transportation requirements for organic produce, these problems are no different than the problems Mr. Mpuru would have faced in the conventional market.

Mr. Mpuru did not sell his produce to an intermediary, however, the role of FGF did share some similarity to that of an intermediary in that they organized a buyer in the organic market and provided subsidized transportation. FGF organized the selling of his product to Thrupps and Mr. Mpuru had no direct contact with the retailer. FGF was the only channel through which Mr. Mpuru had access to the organic market, and he

therefore ran the risk of exploitation. Mr. Mpuru feels that he was in fact exploited. The result of Mr. Mpuru's decision to end his relationship with FGF was the loss of his market and his subsidized transportation.

Mr. Mpuru is aware that the supermarket chains do not want to buy produce from independent small-scale producers because retailers want to work with producers that can provide them with a variety of products at a consistent high volume. Thrupps is a small store that has a lower supply requirement and thus was willing to work with Mr. Mpuru. However, after the national regulations are in place, Thrupps will be required to only purchase organic produce from certified buyers and thus would not purchase organic produce from Mr. Mpuru unless he obtained certification.

5.1.2 Ezemvelo Farmer's Organization

EFO is a small-scale certified organic producer group that sells its produce to a intermediary, H2A Botanicals, who packages the produce and sells it to Pick n' Pay. This arrangement has been successful for EFO. By selling through the intermediary, EFO has gained access to the organic market, which they may not have been able to do independently. The group members are also earning a higher profit in the organic market than they did in the informal conventional market, however it should be noted that they do receive both formal and informal subsidies. The Department of Agriculture provides them with transportation free of charge, and Modi, Hartzell and Auerbach provide them with information and marketing assistance.

It would be very difficult for EFO to sell their produce directly to the supermarket without the involvement of the intermediary, H2A Botanicals. This is because of the

retailer's packaging requirements, and the lack of marketing skills in the EFO group. Even by pooling their financial resources, group members could not cover the cost of establishing a packaging facility. The group does have access to credit, but they are unwilling to utilize this resource as they currently have no means for repayment other than the sale of their produce. In spite of the fact that they have no option but to market through an intermediary, and thus have little control over the price that they receive for their produce, group members earn higher profits working with H2A Botanicals than they did while operating in the conventional market.

Exploitation has not been a problem with EFO because Hartzell, owner of H2A Botanicals, became involved with the group because of his need to find suppliers of organic produce for his packhouse, and because his desire to assist small-scale rural producers. Therefore Hartzell not only buys the produce of EFO, but he also provides them with support in the form of information and marketing. Pick n' Pay is willing to work with these small-scale producers because they interact with one supplier, H2A Botanicals, and they receive greater consistency, variety and volume.

The members of EFO have also been able to obtain certification at a lower cost than they would have independently by obtaining group certification. In addition, because they formed a formal group, they have attracted the attention of several individuals who have provided them with assistance.

5.1.3 Go Organic

Go Organic is a joint venture between Spier and some of the previously disadvantaged producers who work on the farm. These producers do not own or produce on individual

plots, but share in the production activities of the area as a whole. All producers receive a monthly salary from Go Organic, and are thus considered employees of the firm, but some are also shareholders of Go Organic, and thus have partial ownership in the firm. Producers who have demonstrated a commitment to Go Organic have been given shares in the company. However, as the firm has yet to make a profit, these shares have little value. This marketing structure has provided small-scale producers with access to the market and has allowed them to obtain group certification, which has a lower per-unit cost.

Go Organic also markets their produce through an intermediary, Dew Crisp. Go Organic is too small to supply the market directly. Therefore working with Dew Crisp allows them to sell to markets that might not otherwise be able to access. The produce from Dew Crisp is sold to the major supermarket chains that are willing to purchase produce grown by small-scale producers when they purchase from one supplier.

As a result of working with the intermediary Dew Crisp, Go Organic loses potential marketing profit and could be exposed to exploitation. The producers in Go Organic face these same risks from participating in the joint venture with Spier. However, these risks are minimal in this particular situation because of the triple bottom line accounting practices of Spier and their goal of black empowerment. In fact, Go Organic has been subsidized by Spier for the first year of operation and Dew Crisp provides Go Organic with marketing services.

5.1.4 Summary

Table 6 summarizes the preceding case study information. In looking at the table, it is clear that subsidies are key to participation in the organic market in all cases studied. Some producers, such as Go Organic, received direct subsidies but all producers received some form of subsidy. In effect, all three actors also participated in the market through an intermediary. In Mr. Mpuru's case, when the relationship with the intermediary was terminated, he lost access to his market. The three actors also all entered the organic market as the direct result of influence from an outside actor.

Table 6: The Case of Marketing Options

Situation	Structure	Performance
Good: organic produce Situation: high information cost Actors: Small-scale (SS) producers Retailers (supermarket chains)	1. Independent – Mpuru	1. Access to uncertified market only with outside support. Lacks marketing skills and transportation to operate independently.
	2. Intermediary – EFO, Go Organic, Mpuru	2. Can participate in organic market, so income increases. But may be exploited.
	3. Association – EFO	3.Group enters organic market and income increases. Need subsidy for transportation, information, and original motivation. Obtain certification at lower cost.
	4. Joint venture – Go Organic	4. Producers have employment, but do not have individual ownership. Prime motivator is Spier, which provides subsidies.

There were some differences between the performance outcomes depending on the market structure. The joint venture provides producers with relatively secure employment; however, all producers who work for Go Organic do not have ownership of the firm. On the other hand, Mr. Mpuru works independently, but his lack of marketing skills directly resulted in the loss of his organic market. The association, EFO, is able to

participate in the market and the producers that are shareholders are able to maintain control over their land.

5.2 Preventing Opportunistic Behavior

This section will examine alternative structures for preventing opportunistic behavior between transacting parties in the organic market. As discussed in chapter two, the alternative structures for preventing opportunistic behavior include relying on trust and social ties developed through repeated transactions, employment contract, and third party certification.

5.2.1 Joe Mpuru

In Mr. Mpuru's case opportunistic behavior was minimized entirely through relying on trust. EFO trusted Mr. Mpuru that he followed their production methods. Thrupps trusted EFO that their methods were organic. In turn, Thrupps' customers trust the retailer that the produce sold as organic is of a certain organic quality. There is no formal system of monitoring and evaluation. The trust between transacting parties is built through repeated personal interactions between the market actors. Personal connections come about because of the relatively small size of the actors and volume involved. Opportunistic behavior can still take place if there is a breakdown in the relationship or the level of trust.

5.2.2 Ezemvelo Farmer's Organization

In the case of EFO, a formal system of monitoring and evaluation is in place. The consumers who purchase organic produce from the retailers in this marketing chain

demand that the retailer sell certified organic produce. As a result, the supermarket only contracts with certified producers, processors, packagers and transporters. Therefore, the intermediary, H2A Botanicals, must also require certification of its suppliers. The result is that there is a system of formal contracts between all transacting parties in the marketing chain, including among producers in the farmer's organization.

Under the structural alternative of third party certification, negative incentives, mainly the loss of certification, are put in place to avoid opportunistic behavior. At the producer level, the negative incentive to the organization as a whole is the potential of losing group certification, and with it the benefits of the association. According to Modi, those benefits include (1) collective supply in order to sell to Pick and Pay and other retailers; (2) access to outside support from the government and others from joining the formal market; (3) access to financial assistance; (4) access to technical information; (5) group certification is cheaper than individual certification; and (6) bargaining power (Modi 2002). The negative incentive to individual producers, however, is weak because it is difficult to trace opportunistic behavior to individual producers and therefore the certification body requires a system of internal control and inspection.

All members of EFO are required to sign a contract stipulating that they will practice production methods that meet the certification requirements. Afrisco has trained several internal inspectors that are divided into two groups and only inspect properties of the other group. These inspectors are required to inspect all properties once a year and to report any problems to the Quality Control Officer, Modi. Any member that does not follow the rules will be sanctioned according to the rules of the certification body and may be expelled from the group (2001). Afrisco then performs an external annual

inspection of 25 percent of the group (Callear 2002). The certification costs to individual producers are lower because the costs of internal inspection are lower than the costs of external inspection. However, the establishment of this system requires organizational and technical knowledge that are not necessarily available to small-scale producers. Auerbach is also the Director of Rainman, an NGO that provides training in sustainable agriculture for small-scale producers. This organization provided training for the EFO internal inspectors at no charge, and Afrisco has also provided support in establishing the system.

It is important to note that members of the group did not have any concern about opportunistic behavior by other members. This is a well-established community that has close ties between families. They know each other personally and therefore can use their perception of an individual's trustworthiness in deciding whether to admit them to the group. There is also currently little threat of individual members using agro-chemicals as the group members believe that storage potential of the end product is damaged by the application of agro-chemicals (Modi 2002).

Ultimately, with this structure there is still an element of trust present in relying on the word of the certifier. The certifiers interviewed claimed that they can be 100 percent sure if a producer, packager, processor or transporter meets organic standards through a series of physical tests as well as through the inspection system. However, the question arises as to who monitors the certifier. Currently several of the South African certification bodies are in the process of obtaining ISO 65 certification. Until the process is complete the organic market must rely on trust in the certification body's decisions.

5.2.3 Go Organic

As in the case of EFO, there is a formal system of monitoring the marketing chain for Go Organic produce. This requirement for certification also resulted from consumer demand and has also resulted in increased contracting at all levels along the chain. In addition, Woolworths, the main buyer of Go Organic produce, prefers to develop exclusive relationships with their suppliers.

The main difference between EFO and Go Organic is that the producers at Go Organic are under an employment contract. Therefore, for the individual producer, the negative incentive for opportunistic behavior arises from the threat of loss of employment. However, as it is difficult to trace opportunistic behavior to a specific individual producer, this incentive does not necessarily hold. Go Organic has managed this problem by implementing a similar system of internal inspection. Those producers that are shareholders in Go Organic have an additional incentive not to "cheat" as they have greater potential to benefit from the long-term success of the firm.

Go Organic has not had any problem enforcing organic production methods. The Director of Farming for Spier, James Moffett commented that he places great trust in the employees of Go Organic and believe in their honesty (Moffett 2002). That is in spite of the fact that it took great effort for the farm workers to learn the importance of only using organic methods, according to the CEO of Go Organic, Gerrit Hendriks. Even the supervisors and the managers were skeptical because yields were low during the initial conversion period (Hendriks 2002). While the pressure to use non-organic practices was high during some periods, Moffet and Hendriks felt that they could trust the producers

not to do so. An additional incentive preventing opportunistic behavior is that the group is a very high profile group and has lots of exposure to visitors such as buyers, tourists, and the Minister of Agriculture. Even if they wanted to cheat, they would have very little opportunity to do so.

5.2.4 Summary

It is clear from an examination of the three cases that an element of trust is present in all alternative structures for managing the problem of preventing opportunistic behavior. The level of dependence on trust did vary from case to case, and was most important in the case of Mr. Mpuru where there were small personal transactions. In the cases of EFO and Go Organic, trust was replaced by increasing vertical integration through the establishment of contracted relationships at all levels of the marketing chain. See Table 7 for a summary of the structural alternatives to minimize opportunistic behavior.

Table 7. The Case of Preventing Opportunistic Behavior

Actors	Structure	Performance
1. Joe Mpuru: Mpuru & FGF FGF & Thrupps Thrupps & consumer	1. Rely on trust.	1. Personal relationships best developed through small repeated transactions. Opportunistic behavior still possible.
2. EFO: Between members EFO & H2A H2A & retailer Retailer & consumer	2. Mixed: trust & internal inspection trust & external inspection external inspection certification	2. Cost structure of certification favors large firms. Inspection costs can be lowered through group inspection. Formal contracting between all transacting parties. Certifier must be monitored.
3. Go Organic: Between members Go Organic & Dew Crisp Dew Crisp & retailer Retailer & consumer	3. Mixed: employment contract & internal inspection trust & external inspection external inspection	3. Threat of loss of employment may not be effective as violations cannot be traced to individual employees. Trust among producers is an important element.

CHAPTER SIX: CONCLUSIONS

This chapter will present a summary of the results from the two analyses, the lessons learned and implications drawn from these results and suggestions for areas where further research is needed.

6.1 Summary of Results of Adoption Model Analysis

The case studies presented two factors that affect small-scale producers' decisions to enter the organic market that had not been considered in the original hypothesis. First is the effect of health benefits on the adoption of organic production practices. Second is the importance of the access to packaging in marketing organic produce. The case studies also indicated the presence of an outside influence and subsidies were key for these small-scale producers to enter the organic market.

Mr. Mpuru is partially motivated to continue to produce using organic production methods because he believes that consuming organic produce is better for his health. The HDRA study also found that producers in sub-Saharan Africa were aware of the negative health impacts on producers of using agro-chemicals, and this was cited as a reason for not using pesticides and fertilizers. Although health benefits alone are not likely to be significant enough to motivate the producer to adopt organic production practices, it could be an important incentive variable in the adoption decision.

It was suggested by both EFO and Go Organic that access to packaging is key to successful marketing of organic produce in South Africa. Hartmann of Woolworths states that there is no problem with the growing skills of small-scale farmers and that they

can produce a quality product. The problem with small-scale producers in the organic market is that they lack the infrastructure to maintain product integrity. Small-scale producers cannot afford packhouse refrigerators or trucks to maintain the cold chain, and thus the quality of the product (Hartmann 2002). However, it is important to note that cold chain requirements are not a problem for all products. For example, the supermarket requirements for the transportation of potatoes and other tubers are much less stringent than those for other fruits and vegetables. This is part of the reason why EFO has focused on producing taro and potatoes.

The case studies also indicated that key factors in the decision to enter the organic market include the presence of an outside influence and subsidies. The outside influence often provided the motivation for entry into the organic market as well as providing direct and indirect subsidies. In all three cases the actor entered the organic market as the result of intervention by an outside influence. In the cases of Mr. Mpuru and EFO, the individual actors were not aware of the potential market access before this intervention. In the case of Mr. Mpuru, FGF suggested that they could help him sell his produce for a higher price and he accepted their assistance without ever being fully aware of the details of the marketing arrangement. In the case of EFO, Modi provided the initial motivation for entering the certified organic market, but the resulting increase in income from market entry now serves as ample motivation for members to continue to develop this marketing option. In the case of Go Organic, the firm was created by Spier, which is the majority shareholder. Decision making in Go Organic is by previously disadvantaged employees who are motivated by ownership of the firm and by profit.

Subsidies were also an important factor in the actors' decision to enter the organic market. The different outside influences all provided direct or indirect subsidies through subsidized transportation, access to information on organic production practices, certification, and market requirements, assistance in gaining marketing access, training, access to certification, assistance establishing internal control systems, general financial assistance, and assistance gaining access to other capacity variables. There is also an indirect subsidy in the market by the supermarkets that buy organic in-conversion produce at the same price as organic produce. This serves to assist producers during the difficult conversion period.

The presence of social networks that could assist producers in gaining access to capacity variables was insignificant in all three case studies. This is because none of the producers had any personal contacts with other organic producers or even commercial producers. However, this variable may be of increasing importance as more producers enter the organic market.

6.2 Summary of Results Institutional Analysis

The marketing arrangements of all three case studies had in common that all used some form of an intermediary to sell their product to the retailer. This intermediary was an outside influence that in all cases provided some form of subsidy, as discussed above. The different marketing structures of the three cases did result in different performance outcomes. As was expected, the producer who was most independent, Joe Mpuru, was the least successful in the organic market. Both EFO and Go Organic, which had more

formal subsidies and a stronger support system were successful at gaining market entry and increasing producer income.

The alternative structures for preventing opportunistic behavior with respect to maintaining the organic quality of the product all relied on trust to some degree. In the case of Mr. Mpuru, trust was the only method used to prevent opportunistic behavior. In the case of EFO and Go Organic, a system of internal inspection, external inspection and certification and was put in place. Formal contracts were established between different actors in the marketing chain, which resulted in vertical integration. This structure reduced the required level of trust in the producer, but replaced it with trust in the verdict of the certification body. The alternative structures also resulted in different performance outcomes for the small-scale producer. For producers that entered into larger transactions, such as EFO and Go Organic, the market would not rely on trust in the producers. This forced the producers to seek and establish an alternative system for preventing opportunistic behavior. Mr. Mpuru, who has no other system in place for preventing opportunistic behavior, is excluded from markets with larger and less personal transactions.

6.3 Implications

There are several implications that can be drawn from the results of this study. This section will focus on four implications.

First, access to packaging facilities is a key constraint for small-scale producers to gain access to the organic market in South Africa. If entry into the organic market is to be used as a development tool, then the issue of access packaging must first be addressed.

Subsidizing packaging plants could have the direct result of making entry into the organic market financially viable for many small-scale producers.

Second, it is imperative that any initiative to use organic market entry as a development tool be market driven. Every initiative should start with a specific market gap and develop the producers and the product to fit that gap. Otherwise, small-scale producers will grow products that are not marketable and when they do not sell, it will be blamed on the failure of organic market entry as a development tool.

Third, there is currently a dearth of marketing information and information on organic production practices available in South Africa. Currently this is not the key constraining factor for entry into the organic market by small-scale producers, however, if it is not addressed, it will become an increasingly important problem. A key to further developing the organic market as a whole is to increase the quality and availability of this information.

Finally, it is clear that small-scale producers can participate in the supermarket marketing chain for organic products at no additional cost to the supermarket when their products pass through an intermediary. Small-scale producers grow a quality organic product and the problems of marketing and maintaining product identity can be overcome by using an intermediary.

6.4 Areas for further study

The South African organic market is still at a very early stage of development. There are very few small-scale previously disadvantaged producers currently involved in the

market. It appears from this investigation that there are no small-scale producers involved in the market who do not receive some form of subsidy and some form of assistance from an outside influence. It is thus difficult to determine whether the organic market is a viable option for small-scale previously disadvantaged producers. Therefore, it is imperative that before initiating wide-scale initiatives to encourage the adoption of organic production practices and market entry by small-scale producers that further research be conducted to determine whether producers could operate independently and without subsidy in the organic market.

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