School feeding programmes as a mechanism to improve market access for smallholder farmers in rural areas of South Africa

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DECLARATION

I declare that this dissertation is my own work. All citations, references and borrowed ideas have been duly acknowledged. It is being submitted for the degree of MSc Agric in Agricultural Economics in the Faculty of Natural and Agricultural Sciences, Department of Agricultural Economics, Extension and Rural Development, University of Pretoria, South Africa. None of the present work has been submitted previously for any degree or examination in any other University.

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"Kutala kutelula la Shongwe na laMagongo"

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ABSTRACT

It is widely postulated that school feeding programmes that use locally-produced food, specifically from within the boundaries of a community or district, can bring about additional welfare for the children involved and also for local smallholders and small processors. In countries such as Brazil, Thailand, India, Ghana, Kenya and Mali, the school feeding programmes have played a pivotal role in reducing hunger and malnutrition of children, as well as boosting domestic food production through local production. The Brazilian example of sourcing locally-produced food for school feeding programmes confirms that it is feasible to link food production, school meals, nutrition education and community participation.

The primary aim of this dissertation was to investigate the current role of school feeding programmes as a vehicle for improving market access for smallholders in South Africa. Moreover, the aim is to establish whether the school feeding programmes, especially in rural schools of South Africa, have become an important market for smallholders. The study was conducted in the Jozini Local Municipality of KwaZulu-Natal (KZN) – an area highlighted in the National Development Plan as an area with vast untapped agricultural potential and where there should be greater support for public–private partnership. Two questionnaires were administered, namely farm household questionnaires and school questionnaires, to assess smallholder capacity and procurement strategies used by the schools. Key informants included officials of the National School Nutrition Programme (NSNP) at district level, the Department of Agriculture, smallholder farmers, and agricultural extension officers, as well as the school principals and current service providers.

It is obvious that the majority of vegetables required by the NSNP can be sourced in large quantities from smallholder farmers and are available throughout the year (April to September). These vegetables are produced mainly on small plots of land measuring less than one hectare because of the lack of market access and the intensive care required. However, maize and rice (major products in demand by NSNP in the study area) cannot be sourced directly because the school requires a processed product; it might be difficult for farmers to undertake such value addition since there are no small local processors in Jozini. In cases where local production is not sufficient or unavailable, consideration should be given to procuring foodstuff from local supermarkets or wholesalers. Even though farmers have the ability to produce food items for the NSNP market, the study area is still constrained by a lack of access to agro-processing and value addition facilities, transport, post-harvest storage and production inputs.

Findings revealed that the NSNP market does have the potential to be a reliable and stable market, but currently, the NSNP implementation and procurement modality is based on a contracted service provider/middleman. In its current state of implementation, the NSNP does not facilitate smallholder inclusion in the NSNP supply chain. Smallholder farmers in the study area have not participated directly in the school feeding supply chain. Only three (2.8 %) of the local smallholder farmers have sold foodstuffs directly to NSNP, while 97.2 % have not delivered any agricultural produce to the programme. As a result, expected outcomes are not yet realised because the current model of procurement in the study area does not engage with farmers directly. That being the case, in order to facilitate smallholder inclusion in NSNP supply chain, the study recommends the introduction of a decentralised procurement system, together with a new menu recommending more local foods and a centralised payment system to avoid corruption at school level.

The study also shows that the choice of a procurement model depends on the duties carried out by the middlemen and the farmer's cooperative. For instance, the middleman approach reduces the administration work of the NSNP. It also covers factors, such as the placing of orders, processing of invoices and transportation of produce, which the farmers might not be able to cover. However, this approach does not ensure engagement with farmers directly, and the supply chain is too long. A farmers' group approach is ideal as it engages smallholder farmers directly through farmers' cooperatives. Further, the study recommends that farmers

should organise themselves into a marketing and distribution cooperative in order to meet volume and distribution requirements of the NSNP.

This study concluded that the government – through its partnership with the private sector – could play a key role in the development of the local economy by assisting smallholder farmers to supply local institutional markets, such as schools. The NSNP project is strategically positioned to address these needs. More creativity is needed for projects, such as the NSNP, to impact on the lives of beneficiary communities. In addition, structural hindrances should be removed to facilitate more economic activity in previously disadvantaged communities. This could potentially reduce the scourge of unemployment in communities and also enhance nutrition, as well as the quality of education in South Africa.

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ACRONYMS AND ABBREVIATIONS

BAS:	Basic Accounting System
EMIS:	Education Management Information System
JVAC:	Jozini Value Added Centre
KZN:	Kwa-Zulu Natal
UNHTF:	United Nations Hunger Task Force
PDE:	Provincial Department of Education
PSNP:	Primary School Nutrition Programme
SFPs:	School feeding programmes
MDGs:	Millennium Development Goals
NSNP:	National School Nutrition Programme
PNAE:	Programa Nacional de Alimentação Escolar (Brazil school feeding programmes)
SLP:	School Lunch Programme
SMP:	School Milk Programme
GSFP:	Ghana School Feeding Programme
WFP:	World Food Programme

CHAPTER ONE

INTRODUCTION

1.1 CONTEXTUAL BACKGROUND

The United Nations Hunger Task Force (UNHTF) has made seven recommendations on how to achieve the first millennium development goal (MDG), namely poverty reduction. These are stated in the UNHTF's report, "Halving Hunger, it can be done" (United Nations 2005a). One of the strategies identified by the UNHTF to achieve this goal is the implementation of school feeding programmes (SFPs) with locally-produced foods, rather than imported food (aid). Furthermore, SFPs have been identified as 'quick wins' in the fight against poverty and hunger. The UNHTF describes school feeding programmes as a good combination of education and agriculture. Their point of view is that SFPs could increase school attendance, especially of girls. The UNHTF also expects that the implementation of SFPs will stimulate the market demand for locally-produced foods.

The South African Primary School Nutrition Programme (PSNP) commenced in 1994. The programme was introduced on a national scale as a presidential lead project of the Reconstruction and Development Programme (RDP) (Wildeman & Mbebetho, 2005).

The Department of Health (DoH) managed the PSNP from 1998 to 2004.

The main aims of PSNP were:

- to improve education by enhancing active learning capacity, school attendance and punctuality through the provision of an early morning snack, meeting not less than 25 per cent of the Recommended Dietary Allowance (RDA) of energy for children between the ages of 7 and 10, and not less than 20 per cent of the RDA of energy for children between the ages of 11 and 14;
- to improve health through micronutrient supplementation, parasite control/eradication and through providing education on health and nutrition; and

- to enhance broader development initiatives, especially in the area of combating poverty.

In April 2004, the PSNP was renamed the NSNP and the Department of Education (DoE) assumed control of the programme.

Table 1.1: The evolution of NSNP

	Past	2010/2011
Menu	Cold menu	Cooked menu
Quality	Uneven	Improving quality
Selection	Targeting learners	Targeting schools (lower quintiles)
Coverage	Rural primary schools	6 539 271 million learners in Q1, 2 & 3 Primary and Q1 & 2 Secondary schools

Source: Own compilation based on information from NSNP (2011).

With reference to Table 1.1 above, two menus were offered in Gauteng, i.e. a cooked menu and a cold menu. Commercial products such as fortified biscuits and a vitamin-enriched cold drink were used; for the most part, a full cream dairy blend powder was used in schools, and not fresh milk. The cold menu was served more often than the cooked menu.

According to Division of Revenue Act (DORA), Act No. 7 of 2003, the NSNP is funded from a conditional grant allocated to provinces, as well as other directives from the Department of Education and National Treasury (NSNP, 2008). The NSNP targets primary school learners from Grade R to Grade 7 (NSNP, 2008). Currently, the NSNP also accommodates rural secondary school learners from Grade 7 to Grade 12, as compared with PSNP targeting primary schools only.

There is growing support for the idea that school feeding programmes that use locally-produced food, specifically from within the boundaries of a community or district, can bring about additional welfare for the children involved and also for local smallholders, small processors, communities and economies. In most countries that use local agricultural production to complement their school feeding programmes, this linkage is seen as a channel to ensure sustainability and take advantage of a range of potential benefits or welfare.

School feeding programmes have been identified as being very potent in reducing hunger and malnutrition of children, as well as in boosting domestic food production through local production. Furthermore, by purchasing foodstuffs through local suppliers, school feeding programmes provide a structured demand for agricultural produce (Masset & Gelli, 2013). This, in turn, can stimulate not only an increase in agricultural production, but also an environment whereby small-scale farmers have more security and are thus able to take calculated risks to invest in their farming activities, such as through improved seeds, fertilisers and technologies (Bundy, Burbano, Grosh, Gelli, and Jukes & Drake, 2009).

Drake, McMahon, Burbano, Singh, Gelli, and Cirri and Bundy (2012) argued that domestic procurement is being actively evaluated by countries and development partners as a means of achieving sustainable school feeding programmes, and at the same time, for the use the purchasing power of the programme as a stimulus for the local agricultural economy. As such, local purchase of food for school feeding programmes is seen as a bridge that connects smallholder farmers with local markets and force multipliers, thus benefiting children and the local economy at the same time. By linking up to domestic markets, such as school feeding schemes, smallholder farmers and small processors will have the opportunity to develop and improve production processes that will increase their competitiveness in this market.

If strong market linkages, such as the school feeding market, are created then this can lead to development of the value chain; it can stimulate an increase in the productive base of the smallholders, allowing for increased volume and quality of crops to be available to the buyers. An effective market linkage increases opportunities for value addition which can benefit the value chain and the buying company, as well as the smallholder.

The Brazilian example of local agricultural production as a complement to school feeding programmes shows that it is possible to link food production, school meals, nutrition education and community participation. Therefore, school feeding programmes, as a vehicle to improve market access, can lead to development of the value chain and a strong market linkage that will boost domestic production, employment opportunities and improve the overall rural economy.

1.2 PROBLEM STATEMENT

1.2.1 General problem

Given the historical structure of agribusiness in South Africa, smallholders are often excluded from modern agribusiness channels owing to a lack of access to services, high transaction costs, and poor infrastructure. For instance, Louw, Jordaan, Ndanga and Kirsten (2008) have argued that to qualify as a supplier to large, high-value supermarkets, smallholders need to comply with a host of standards, such as organic farming certificates, food quality and safety regulations, and packaging criteria. As a result, smallholders may not be able to optimally exploit opportunities in these global food chains; consequently, smallholder farmers will be found to be isolated from markets. This, in turn, increases the perceived risks and costs associated with purchasing from large numbers of dispersed producers.

Local rural markets for high-value food commodities are thin, and the marketable surplus of individual smallholders is too small to be traded economically in distant urban markets owing to high transportation and transaction costs. Limited access to guaranteed markets for produce and to the acquisition of inputs is a major problem confronting smallholders. Local commodity markets are characterised by high volatility. On the other hand, international markets, as well as markets offered by agro-industrial firms, are relatively more stable but are inaccessible without specific channels, such as those provided by predetermined producer–buyer relationships. (Van Schalwyk, Groenwald, Fraser, Obi & Van Tilburg, 2012)

Because of their limited capacity and capabilities, smallholders often have difficulties in exploring new market opportunities. However, in the opinion of Van Rooyen (2011), small-scale farming cannot be ignored and will always be relevant for household food security. Van Rooyen (2011) concluded that there would be no bright future for small-scale farmers unless they are linked into the agri-support system and commercial value chains. Therefore, they need support that aims to organise and coordinate smallholder production and new market linkages need to be established.

1.2.2 Specific problem

Twenty years after the inception of the school feeding programme in South Africa, it is noticeable that enrolment, attendance and retention have improved appreciably. For example, a study on the cognitive and behavioural effects of a school breakfast on junior primary school children in South Africa revealed evidence of an increase in active participation in class, improved concentration, improved short-term memory, increased positive peer interaction, and reduced disruptive behaviour, all of which was attributed to the improved nutritional intake due to the consumption of breakfast (Bundy, Burbano, Grosh, Gelli, Jukes & Drake, 2009; World Health Organization, 2007; Bennett, 2003; Buhl, undated). In addition, Bundy *et al*. (2009) found that enrolment ratios for female children, including progression through primary school, also improved. Fittingly, then, investment in nutrition for children is recognised as a key development goal in the National Development Plan 2030.

However, the same cannot be said about the boost which the school feeding programme is supposed to have given to domestic food production by smallholder farmers. The direct link between the NSNP and local smallholder farmers is a subject that has not been studied and documented at all; hence, the study was designed to establish how the local farmer had benefited directly from the NSNP programme by doing business with the school as individuals or cooperatives. By linking local farmers to the school feeding programme, a captive local market is created where the farmers can sell their surplus food. There is, therefore, a need to strengthen the linkage between the school feeding programme and local agricultural production by exploring the possibilities of localising the menu with what can be produced by the community, in particular at district, region and national levels, without compromising the health and nutritional needs of the children.

By supplying their produce to the school feeding programmes, new markets would be opened up to farmers. This would be an advantage to the farmers who are not able to access markets for their produce. Linkage between local agricultural production and school feeding programmes represents a mutual relationship and benefits, since it provides smallholder farmers with a stable market and an opportunity to increase their incomes. This also enables schools to obtain food closer to the schools, thus allowing the community to participate in

decision making and managing resources (Bundy, Burbano, Grosh, 2011). Furthermore, this linkage can also act as a vehicle to provide more diverse foodstuffs, including those that are fresh and unprocessed.

The question is therefore whether school feeding programmes, especially in the rural schools of South Africa, can become an important market for smallholders and small local processors.

1.3 JUSTIFICATION OF THE STUDY

There are ample scholarly debates about the importance of employment in rural areas as a way of reducing rural poverty and food insecurity. Consequently, smallholder inclusion and commercial transition through the school feeding scheme is of high importance for agricultural growth and for supporting the motive of aiding and triggering agricultural development, as well as increasing smallholder farmers' income through enhanced agricultural productivity. For instance, smallholder inclusion through the school feeding scheme will address the barriers to market access, boost food production and increase farm income of local smallholders. The above-mentioned multiplier effects through local sourcing will also tackle issues of food insecurity, both at the farmer household level and the rural area as whole, in line with government's policy of reducing unemployment and poverty (Ortman & King, 2010).

1.4 GOALS AND OBJECTIVES

The main objective of this study is to investigate the current role of the school feeding programmes in South Africa as a vehicle for providing market access for smallholder farmers in rural areas of South Africa.

The specific objectives are:

- To investigate how these schools are currently purchasing their food, from whom they buy, prices paid and how the food is stored;
- To examine the ability of smallholder farmers to produce and sell locally-produced foods to schools;

- To determine the proportion of the current total demand of foodstuffs for the school feeding programme that might be sourced locally;
- To identify and propose the institutional arrangements or framework that would link market access of farm produce by local smallholder farmers to the school feeding programme and the critical factors to consider when purchasing locally-produced foods.

1.5 STATEMENT OF HYPOTHESIS

Hypothesis statement 1: The school feeding programmes as currently implemented have not resulted in better market opportunities for smallholders in rural areas of South Africa.
Hypothesis statement 2: School procurement procedures inhibit the local procurement strategies of school feeding programmes.
Hypothesis statement 3: Smallholder farmers are able to supply all the schools in the local community.

1.6 METHODS AND PROCEDURES

1.6.1 The study area

As illustrated in Figure 1.1 below, the study was conducted in the area of the Jozini Local Municipality in KwaZulu-Natal province (KZN), in the south west region of South Africa. KZN is one of the poorest rural provinces in South Africa. Jozini has been highlighted in the National Development Plan as an area with vast untapped agricultural potential and where there should be greater support for public–private partnerships.

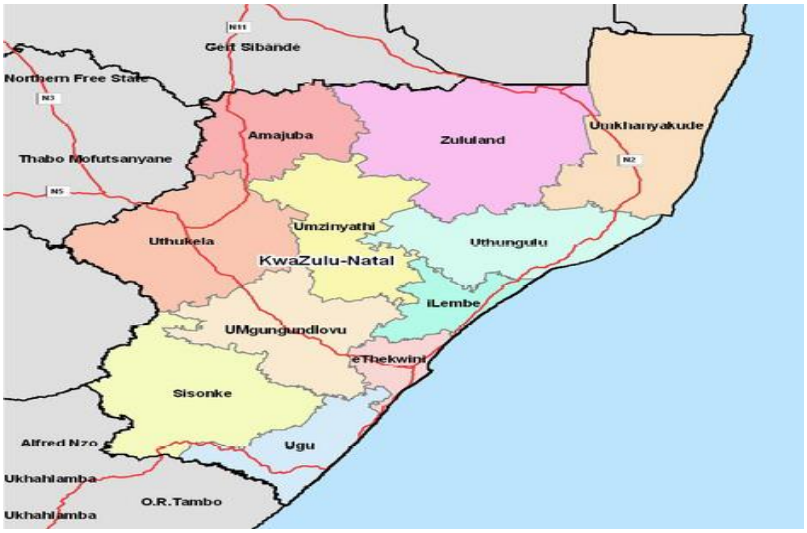

Figure 1.1: The study setting
Study area: Kwa-Zulu Natal, UMkhanyakude, Jozini area

According to the Jozini Municipality Integrated Development Plan (IDP), Jozini has all the necessary ingredients for massive and diverse agricultural practice, given the climate, soil types and conditions, water availability and stable weather throughout the year. It is the only area in the whole district in which two to three crop cycles can be harvested. Furthermore, it is also an area in which smallholder farmers are involved in many different agricultural activities.

1.6.2 Research design, types and sources of data

The study is a descriptive survey. A descriptive study seeks to find answers to questions through assessing the opinions or attitudes of individuals towards events or procedures (Cohen & Manon, 1995). According to Beifring (1994), descriptive analysis comprises principles, methods, and techniques to present questionnaires, and to compile and construe empirical data. The real information inside all data can be uncovered and the knowledge that is collected can be presented through the use of descriptive statistics (Cohen & Manon, 1995; Britton & Garmo, 2002). The use of tables and diagrams are often related to and used when presenting descriptive statistics. The descriptive survey has been found appropriate for determining whether the school feeding programme as currently implemented has resulted in better market opportunities for smallholder in rural areas of South Africa.

Qualitative and quantitative data were used for this study. These were obtained from primary and secondary sources. The primary sources include NSNP and Government officials. Structured interviews and questionnaires were used to elicit the information needed. The secondary data was obtained from articles, reports, research papers, internet and other related sources.

1.6.3 Population and sampling procedure

The research objectives were addressed under the following points of enquiry.

"To investigate how these schools are currently purchasing their food, from whom they buy, the prices paid, and how the food is stored."

- A separate questionnaire was administered to schools to assess procurement strategies and their experience with local procurement. The core part of this study consisted of all schools receiving NSNP in the study area.
- It was chosen to select all schools so as to be able to collect in-depth qualitative data about the functioning of the NSNP procurement strategies at these schools. The rationale was that this method is most suitable for gaining a proper understanding of the relation between schools and local farmers.

"To examine the ability of smallholder farmers to produce and sell locally-produced foods to schools."

- Another questionnaire was also administered to farmers to assess smallholder production capacity to produce crops or vegetables for the NSNP in the study area.

"To determine the proportion of the current total demand of foodstuffs for the school feeding programme that can be sourced locally."

- The foodstuffs in the school feeding basket in the 32 surveyed schools were quantified using the standard menu provided by the KZN NSNP guidelines.

"To identify and propose the institutional arrangements or framework that would link market access for farm produce from local smallholder farmers to the school feeding programme and the critical factors to consider when purchasing locally-produced foods."

- The literature review, findings from both questionnaires and surveys, and key informant interviews were used to develop the potential model that would facilitate delivery of farmers' agricultural produce to the NSNP market.

In addition to the above approaches to data collection, key informants included NSNP officials at district level, the Department of Agriculture, smallholder farmers, and agricultural extension officers, as well as the school principals and current service providers. Their insights into the discussion were useful in understanding the nature of the assets and support available to the farmers, and the ways in which the school feeding supply chain is structured.

A multi-stage sampling technique was adopted in selecting the respondents. The first stage involved purposive selection of one rural province (Kwa-Zulu Natal Province) and one district (UMkhanyakude) where there is a preponderance of smallholder farmers that produce crops, and where there is preponderance of schools participating in school feeding scheme. Purposive selection was then used to select one local municipality, namely, Jozini Local Municipality. The second stage involved a simple random selection of farmers in Jozini and the selection of all the schools under the NSNP. Thus, a representative sample of 80 smallholder farmers, from a population of 357, and 32 were schools selected for the study. Therefore, the population for the study was made up of all smallholder farmers in Jozini area (see Table 1.2 below). The list of the smallholder farmers (sampling frame) was obtained from the Department of Agriculture. The list of rural schools and current suppliers was obtained from the Jozini Department of Education.

Table 1.2: Summary of the sample used in the study

Sampling unit	Study population	Sample size
Schools	38	32 (100% target but six school refused to participate)
Farmers	357	80 (Random selection-lottery approach)
Service providers	12	4 (100% target but the other 8 suppliers refused to be part of the study)

1.6.4 Data Analysis Procedure

Quantitative data were edited, coded and analysed with Statistical Product for Service Solution (SPSS) and Microsoft Excel to present results in frequency tables, line graphs and pie charts. Results of the interviews were analysed by identifying specific responses in terms of difference and similarities, and direct quotes were used where necessary. Descriptive statistics was used to profile smallholder's capacity characteristics (supply side) and the school feeding procurement strategy (demand side). Descriptive statistics, such as frequency distribution, percentages, graphs and charts, was used to analyse the data collected. Tables were constructed to indicate responses from each item that was surveyed. Qualitative data from open-ended questions was organised into sub-topics and tabulated accordingly. Frequency distribution tables were used to present the quantitative data, while descriptive statistics, such as percentages and frequencies, were used to present the qualitative data. Qualitative data was analysed thematically according to the themes ascertained in the research objectives.

1.7 LIMITATIONS OF THE STUDY

The initial study setting chosen for this study was the Eastern Cape, which was chosen based solely on the procurement model (decentralised) and because a province with rural areas was needed. The Eastern Cape is one of the most rural and poorest provinces in South Africa. However, owing to the inaccessibility of the schools, the researcher decided to change the study setting to the North West province. The North West province was selected because it uses a decentralised procurement model whereby the provincial Department of Education

transfers funds directly to the schools. However, it was difficult to get access to those schools owing to the misleading list of schools receiving NSNP.

Lastly, KZN was selected because it is also one of the poorest provinces of South Africa. Permission for conducting a study in Jozini schools was requested in mid-August 2013. To date, the KZN Department of Education has failed to give feedback with regard to the application. Therefore, the researcher approached the schools, as well as the district office, to become part of the study. Documents, such as claim forms, delivery receipts, etc., were inaccessible because permission was not given to access them. Currently, the NSNP menu does not include meat; therefore, livestock farmers were excluded from the analysis.

1.8 THEORETICAL AND CONCEPTUAL FRAMEWORK

The initial overview of the theoretical concepts on which the analytical framework of the study has been developed is set out below. The study was based on the Home Grown School Feeding Programme (HGSFP) Theory postulated by Bundy *et al*. in 2009, as illustrated in Figure 1.2 below. According to Bundy *et al*. (2009), the HGSFP proposition combines elements from both the public procurement and localisation debates (Figure 1.2 below). This model proposes that the public sector can be used to stimulate a "local" supply response, which in turn (e.g. though the new wages pumped into the economy) creates new demand for "local" goods and services. In theory, as this cycle begins to turn, it becomes increasingly self-sustaining.

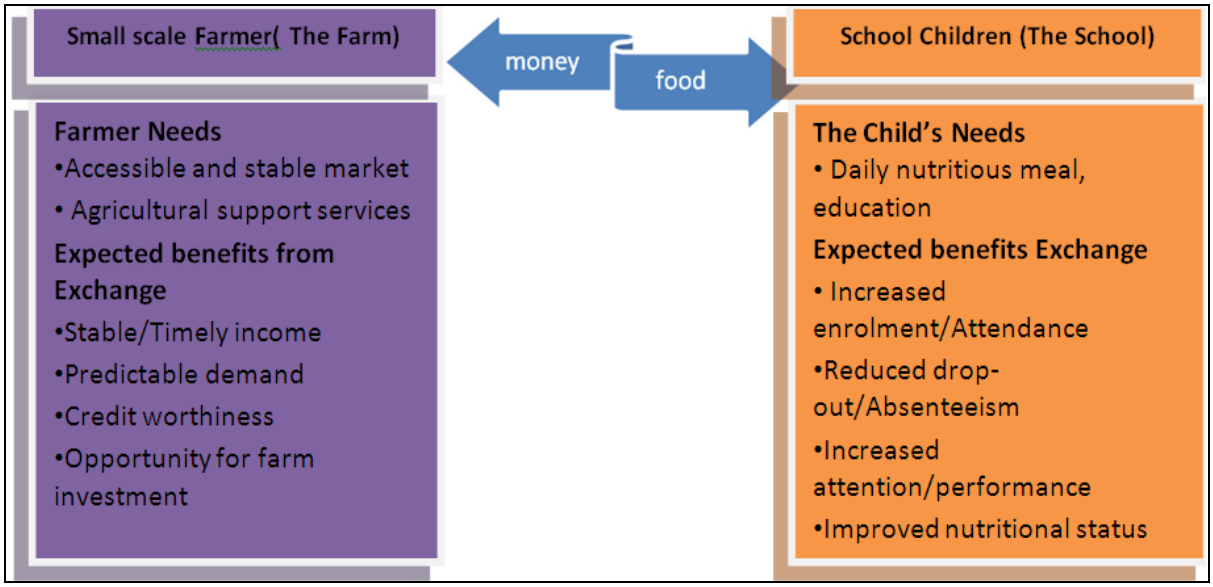

Figure 1.2: The Home Grown School Feeding Theoretical Framework

The theory is based on the assumption that HGSFP has the potential to deliver benefits to many categories of beneficiary, not only learners. Ranked in terms of presumed priority for HGSF programmers, these beneficiary groups include:

- Primary beneficiaries: Children (especially learners from poor families)
- Secondary beneficiaries: Farmers (especially small-scale local smallholders)
- Tertiary beneficiaries: Caterers (predominantly local women)
- Additional beneficiaries: Suppliers (traders, or farmers' associations).

Furthermore, this theory was used alongside the three-stage framework or model of transition from School Feeding Programme (SFP) to HGSFP, proposed by Espejo, Burbano and Galliano (2009). The model suggests that buying food from small-scale farmers does not happen automatically or suddenly, rather, it happens incrementally over three stages. The programme evolves depending on the specific context and capacities of the different stakeholders involved. HGSF is conceptualised as a process that can take many years to complete, and requires flexibility to adapt to changing situations and to manage the risks and challenges that might arise.

According to Espejo *et al*. (2009), this theory is characterised by three stages:

- The first stage is **Strategic procurement**: This stage is characterised by a relatively small proportion of food purchased from small-scale farmers. The rest of the requirements are bought through normal practices. The aim is to create an enabling

environment for smallholders to start accessing the school feeding market. *This stage informed Chapter Three of the dissertation.*

- The second stage is **Agricultural Development**. This stage focuses on increasing the proportion of food purchased from smallholders, without sacrificing the quality, quantity and timeliness of the food being delivered to schools. This stage depends on the extent to which agricultural production is increased. *This stage informed Chapter Four of the dissertation.*
- The third stage is **Institutional and Policy Development**. This stage focuses on developing sufficient capacity to permit a reliance on small-scale farmers' self-initiated response without sacrificing the quality, quantity and timeliness of food being delivered to the schools. *This stage informed Chapter Five of the dissertation.*

According to Espejo *et al*. (2009), the degree to which HGSF can increasingly benefit small-scale farmers depends on the interaction between HGSF's three focus areas/stages mentioned above, and more specifically, on whether the food given to children is based on local tastes and consumption patterns; the degree of political support for the programme; the institutional capacity to implement it; small-scale farmers' productivity and capacity to respond to the needs of the programme; and the availability of funds and capacity to maintain the programme over time, even if small-scale farmers' productivity is still low.

With regard to conceptual framework, the strategy to feed school children with locally-prepared food that is nutritionally adequate will focus spending on local foodstuffs, thereby providing a ready market for local farm produce, leading to wealth creation for rural households. With the ready market and increased household incomes, the rural community will generate wealth. With more income, the rural community can afford the additional food intake and other items needed to improve their nutritional status to eliminate short-term hunger and malnutrition. This will help break the cycle of rural household and community poverty.

1.9 OUTLINE OF THE DISSERTATION

The dissertation is organised into six chapters. The global review of school feeding procurement strategies is outlined in Chapter Two. Chapter Three provides an analysis of the

school feeding procurement model used in the study area. Chapter Four consist of a review of smallholders' ability to produce and sell food to schools. The potential framework or model to link farmers to schools is presented in Chapter Five. Lastly, the conclusions and recommendations of the dissertation are presented in Chapter Six.

CHAPTER TWO

GLOBAL REVIEW OF SCHOOL FEEDING PROCUREMENT STRATEGIES

2.1 INTRODUCTION

In countries such as Brazil, Thailand, India, Kenya and Ghana, school feeding programmes have been identified to play a role in boosting domestic production though local procurement. This chapter reviews the literature on school feeding food supply chains so as to provide a clear understanding of their importance, with regard to local sourcing of foodstuff from local farmers. First, it reviews school feeding procurement strategies in Latin America, South East Asia and Africa by discussing the procurement mechanisms used by these countries, as well as the procurement mechanism adopted by each country. Second, it looks at the lessons learnt from these procurement mechanisms.

2.2 BRAZIL

Brazil's National School Feeding Programme (now called "PNAE") started in 1955 and now serves 37 million children across the country. The Brazilian model is a decentralised, home-grown school feeding programme and its local procurement target is 30 %. Since 2008, the PNAE has been supported by the National Constitution and highly integrated with national policy (Buani & Peixinho, 2012). The government's Food Security and Nutrition Programme introduced the concept of "food culture" and of local solutions to respond to food insecurity. These concepts have been adopted by the National School Feeding Programme. The programme is managed by the National Agency for Education Development, which is linked to the Federal Ministry of Education and transfers federal funds to states, the federal district and municipalities. Federal funds distributed to each executive entity for each year are calculated based on the total number of students registered (Lawson, 2012, Samberg & Sabates-Wheeler, 2011).

In Brazil, the public procurement of food specifically from local farmers is perceived as a tool to stimulate local development by promoting short supply chains. Food procurement is

decentralised and largely school-based. The supply chain in the Brazilian decentralised system varies among municipalities, reflecting the differences in community involvement and existing networks or infrastructure. This variation is also attributable to the fact that Brazil is a federal republic comprising states with a certain degree of autonomy. Although the decentralised school feeding programme reflects the diversity of municipalities, it also sometimes leads to disparity in quality.

The small scale and diversification of procurement discourages large traders. Food is delivered according to pre-arranged menus. The Ministry of Agriculture's Programa de Aquisição de Alimentos (Food Procurement Programme) organises and trains the small producers to become suppliers of the school feeding programmes. Many municipalities have started to buy fruits, flour and beans from local rural producers' cooperatives and associations, in order to benefit local rural producers' rather than large-scale providers (Espejo *et al*., 2009). [1]

2.3 INDIA

With a mix of public and private partnerships in implementation, India has both state administered programmes and those supported by private sector organisations. The Mid-Day Meal (MDM) Programme, the largest school feeding programme in the world, operates through the Food Corporation of India (FCI), which procures food domestically and then distributes it to a network of FCI stores, where it is then transported to individual schools and villages. The programme is largely decentralised by the state, with operations varying throughout the country. There are no local procurement targets as Home Grown Procurement is less important in India (as a net exporter of grain). The massive public distribution system based on the procurement of vast quantities of grain from farmers at minimum support prices makes the SFP much less important as a source of demand for grains. However, there is scope for the local procurement of vegetables and condiments.

[1] Espejo, F., C. Burbano, and E. Galliano. 2009. Home-grown school feeding: A framework for action. Rome: United Nations World Food Programme.

India has implemented the Decentralised Procurement Scheme since 1997–1998 in order to encourage procurement in non-traditional states. Nearly 80 per cent of the Targeted Public Distribution System (TPDS) -purchased grains, however, this takes in a small number of states. Procurement of food grains and ensuring continuous availability of adequate food supply is the responsibility of the FCI. The State Government makes arrangements for the transportation of food grains from the nearest FCI depot to each school (via state appointed transport agencies).

2.4 EL SALVADOR

In 2008, the school feeding programme in El Salvador was fully taken over by the government after 24 years of partnership with WFP. The programme started in 1984, during the civil conflict, reaching 300 000 students, being 90 per cent of school-age children in rural areas. In 1997, six years after the signing of the peace accords, the government began to take over programme management responsibilities while WFP withdrew from departments not classified as most food-insecure. By 2006, government allocations totalled US$10 million, reaching 651 000 children in 3 500 schools (88 per cent of rural primary schools and poor urban schools); in 2008, the government achieved 100 per cent coverage, coinciding with the planned date for the complete transfer of responsibilities to national institutions.[2]

The Ministry of Education recently signed an agreement with WFP under which the Ministry transfers funds to WFP, which procures and distributes the food to extended delivery points at departmental level. By leveraging its experience in food procurement in the region, WFP has been able to increase the efficiency of the procurement process. In 2008, WFP was able to procure all food commodities at cheaper rates, generating savings of about US$3 million, which were then used to expand coverage of the programme and increase the food basket.

According to WFP, the inclusion of locally-produced foodstuffs in El Salvador decreased the costs of the food basket and allowed for local purchases and a smooth government takeover.

[2] WFP. (2012). State of School Feeding Worldwide. United Nations World Food Programme. Forthcoming.

At least three different food baskets were piloted. When food types were not familiar, the community was familiarised with their characteristics and possible local recipes for preparation (Bundy *et al.*, 2009).[3]

2.5 THAILAND

Currently, the school feeding programme in Thailand consists of two feeding schemes, namely the School Lunch Programme (SLP) and the School Milk Programme (SMP).

2.5.1 SLP

The Fund for School Lunch of Primary School Act B.E. 2535 was enacted in 1992, securing annual central government funding for the national SLP (WFP 2007; Jumpatong 2007:2). The Act states that the aim of the programme is to alleviate nutritional problems among school children. The key concern, especially in the early years, was malnutrition (i.e. underweight). The SLP is implemented in all public primary schools (approximately 30 000 schools) in grades 1–6 and kindergarten. It targets children suffering from malnutrition and, to a lesser extent, children living in poverty in remote rural areas (Chittchang, 2005).

The procurement mechanism of the programme has not been documented in detail. As noted above, the SLP today operates under a decentralised system whereby individual schools are given the authority to determine the procurement method (e.g. where the food is produced, whom to buy it from, and how the food is cooked and served) and how to use the subsidy. The purchasing process is informal and does not involve public tenders; there is no formal procurement mechanism or emphasis to promote local sourcing. However, despite this absence of formal policy, local sourcing is a common practice under the programme. Most schools (estimated to be around 90 per cent) purchase perishable food items (such as fresh vegetables and meat) from local producers, often through local markets. However, local

[3] A study on shaping the demand for Home Grown School Feeding: the school feeding programme theory. London: Partnership for Child Development. WB/WFP, Rethinking School Feeding: Social Safety Nets, Child Development, and the Education Sector, 2009.

procurement (especially market purchase) may be distinguished from procurement of locally produced food, and Jumpatong (2007) estimates that most of the food procured is of local provenance. It may be speculated that schools customarily purchase local produce on a regular basis. [4]

2.5.2 SMP

The SMP provides an outlet for the produce and further contributes to creating a future market by encouraging children to develop a taste for milk from an early age (Suwanabol n.d.; Delgado *et al*. 2003). Recently, the programme has sought to maximise the involvement of local farmers' cooperatives, thereby enhancing its rural development potential. It can therefore be said that the SMP complements the goals of promoting nutrition and health, dairy farming and rural development. The programme was initially implemented by the Ministry of Education, but has since been decentralised and administered by Local Administration Organisation (LAOs) under the Ministry of Interior (Jumpatong, 2007,). The central government budget is directly allocated, though LAOs, to individual schools which purchase their own milk.

The procurement mechanism of the programme, like that of the SLP, is scarcely documented. Nevertheless, it appears that it has undergone some significant changes in recent years. In the last decade, the purchasing of school milk was administered at the provincial level by the provincial educational office. Owing to the lack of efficiency and accountability in this system, the procurement policy was subsequently changed to allow individual schools to take responsibility for purchasing milk for themselves, according to the programme guidelines. These guidelines required schools to purchase milk from the nearest producers, whether or not they were situated in the same province, and to give priority to local farmers' cooperatives or agricultural colleges.

[4] WFP. (2012). State of School Feeding Worldwide. United Nations World Food Programme. Forthcoming.

This policy has since been refined in order to prevent intense competition where large cooperatives and companies tend to have a significant advantage over small cooperatives.[5]

Under the current system, the country is divided into three school milk zones. The consumers (i.e. children) and the suppliers of milk must be within the same zone (e.g. raw milk in zone 1 must be processed by a dairy in zone 1 and be consumed by schools in zone 1). Thailand dairies who wish to become a school milk supplier must first be certified by the Ministry of Industry, possesses a certificate from the Thai Food and Drug Administration, and have a long-term contract to buy local raw milk. By 2004, all school milk suppliers had to be HACCP (Hazard Analysis and Critical Control Points) certified. All school milk must be made from liquid raw milk and not from powder (Jumpatong, 2007).

2.5.3 Lessons learnt from the two feeding schemes (SLP and SMP)

In contrast to the SLP, the SMP has an explicit emphasis on local procurement and, more specifically, on procurement of local produce. If the SLP is an implicitly "home-grown" programme with informal procurement practices, the SMP may be described as an explicitly "home-grown" programme supported with a formal procurement mechanism and policy. Such an explicit emphasis on local sourcing may not have been a feature of the programme in the past; at least one writer commented in 2003 that local dairy cooperatives played a minimum role in the SMP because most of the milk was procured from "the politically-based business firms in Bangkok" (World Food Programme, 2006).

Although Brazil and India have quite different agrarian structures and specific classifications for farmers (see Table 2.1 below), in both countries the proportion of generally disadvantaged rural groups in the total population, especially smaller-scale producers, is significant. The two countries have instituted large-scale procurement programmes whereby the government purchases agricultural goods that support farmers' livelihoods by offering advantageous

[5] The World Food Programme (2004), WFP Food Procurement Manual report, WFP. The World Food Programme (2006) Global School Feeding Report 2006, WFP

market alternatives. These initiatives reconcile trade opportunities for producers with the provision of goods to vulnerable populations (Souza & Chmielewska, 2011).

2.6 GHANA

The Ghana School Feeding Programme (GSFP) commenced in 2005 with the intermediate objective of reducing hunger and malnutrition, increasing school enrolment, retention and attendance, and boosting local food production. The GSFP is an initiative under the comprehensive Africa Agricultural Development Pillar which seeks to enhance food security and reduce hunger in line with the UN-Millennium Development Goals (MDGs).

The GSFP's procurement is highly decentralised and engages with the private sector to a large degree; it gives contracts to caterers to procure, prepare, and serve food to students in beneficiary schools. While the model instructs caterers to procure from the schools' communities, and source from the district and national levels only when food items are not available, in practice caterers are sourcing the large majority of food from the market, regardless of local availability. Caterers are advised to procure 80 % of foodstuffs from local farmers, but this rule has not been enforced. Payments to the caterers are made from the District Assemblies, under the supervision of the District Implementers Committees (DICs), based on GH¢0.40 (US$0.26) per child per day. Caterers are not permitted to serve more than three schools each, and their profit is the savings made after the food has been procured, and distributed. The funds are intended to be released to the caterers every 2 weeks, although in practice payment is highly irregular.[6]

2.7 KENYA

The School Management Committee (SMC) and School Feeding Sub-Committee (SFC) directly manage the HGSF programme at the school level. Each school has an SMC that includes the head teacher as the secretary, a chairperson who is a parent, and other parents who are members. Schools currently have two separate bank accounts – one is a general-

[6] Ghana School Feeding Program, Program Report, 2008.

purpose account and the other is for instructional materials and supplies. There is no official target for the procurement of food, but 'local' is defined as (i) from parents of school children (ii) within the school zone (iii) near school, in community, or (iv) from the local market. The current proposal includes food produced in the whole of Kenya.[7]

The Ministry of Education's (MoE) Home Grown School Feeding (HGSF) issues local tenders for cereals, pulses, and oil, while the parents source salt and firewood. A school's ability to purchase locally-grown products is hindered because all schools in the HGSF programme are within semi-arid areas, where production capacity is limited. As a result, the MoE has suggested using traders as a fallback in times of decreased rainfall. When food prices are at their lowest, directly after harvest, schools will purchase as much as possible to ensure a supply sufficient for the entire term. However, storage is a challenge for many schools.[8]

2.8 POLICY APPROACHES IN BRAZIL AND INDIA

In India, and Brazil, the school feeding programmes are tightly integrated with their national policies. As the stakeholders associated with school feeding range from Ministry of Agriculture to Education, from Economy to Health, tangible commitment from the government is a key for success. These global experiences have much potential for further exploration by developing countries. Both of them show that government procurement in food-security programmes can offer critical market alternatives to farmers.

The Brazilian experience can be explored, particularly with regard to its emphasis on local trading alternatives for producers who otherwise would have precarious access to markets. This experience has shown that by linking local food production with food distribution, and taking into consideration the types and amounts of food available and the capacity of producers to participate in these schemes, it is possible to support marginalised farmers and supply appropriate goods for food schemes.

[7] World Food Program (WFP), 2012.

[8] Kenya Ministry of Education Home Grown School Feeding Programme

In Brazil, the food for schools is increasingly being procured from local sources, such as local wholesalers, producers' cooperatives, or school and community gardens. Currently, municipal and state governments are mostly responsible for procurement. They make decisions for the state, which had been done by private corporations in the 1990s in many municipalities.

At the same time, the increasing involvement of agricultural extensionists and NGOs working with small-scale farmers in local school programmes has enabled local government-run school feeding programmes to accept more home-grown food. Yet, the institutional coordination for local sourcing has been precarious in many municipalities, especially in the North. Brazil PANAE reported that logistics and basic infrastructure need to be improved for small farmers' cooperatives and they further argued that associations which sometimes do not know how to participate in the government's tender process or how to properly package their products for storage also need to improved (Souza & Chmielewska, 2011).

2.9 Global comparison of governance, flow of funds and the procurement mechanism of school feeding programmes

In order to understand alternative procurement models of school feeding and their pros and cons, the literature search further looked at Brazil, Chile, Ghana, India and Kenya school feeding programmes in the context of the following:

- Food supply arrangement
- Local community inclusion in the school feeding programme
- Key learnings from each country.

Table 2.1: Food procurement system and flow of funds

	Brazil	Chile	Ghana	India	Kenya
Food procurement system	Decentralised system and largely school-based	Auction system and largely controlled by the traders	Highly decentralised system and largely school based	decentralised system by the state	Tendering system (local tenders) Highly decentralised system
Local community involvement	have involved farmers quite successfully in their national school feeding programme	community participation in school feeding programme is very low	Community involvement are very strong	The involvement of local communities has been minimal	Community involvement are very strong
The average daily cost per child	R$0.18 (R1.98)per daily student	$1.13 (R12.54) per daily student	GH¢ 0.40 per daily student	Primary: R3.30 Secondary: R4.92	R0.99 per daily student
Flow of funds	Funds transferred from the Food Corporation of India FCI to all municipalities	The La Junta Nacional de Auxilio Escolar y Becas (JUNAEB)[9] pays the food service providers	Funds transferred from the state to schools	Funds transferred from the state to service providers	The Ministry of Education funds disbursed to the schools twice a year

[9] which currently administers school feeding programmes in Chile.

Food procurement system and flow of funds

With reference to Table 2.1 above, it will be seen that in the food supply chain in Brazil, food procurement is highly decentralised, and largely school-based and varies among municipalities, reflecting the differences in community involvement. The small scale and diversification of procurement discourages large traders. Food is delivered according to pre-arranged menus. The Ministry of Agriculture's Programa de Aquisição de Alimentos (Food Procurement Programme) organises and trains the small producers to become suppliers of the school feeding programme. Interestingly, the majority of municipalities in Brazil have already started to buy fruits, flour and beans from local rural producers' cooperatives and associations, in order to benefit local rural producers, rather than large-scale providers.

The Ministry of Education (MoE) Home Grown School Feeding in Kenya issues local tenders for cereals, pulses, and oil, while the parents source salt and firewood. A school's ability to purchase locally-grown products is hindered because all schools in the HGSF programme are within semi-arid areas, where production capacity is limited. As a result, the MoE in Kenya has suggested using traders as a fallback in times of decreased rainfall (Bundy *et al.*, 2009). When food prices are at their lowest, directly after harvest, schools will purchase as much as possible to ensure a supply sufficient for the entire term. Storage, however, is a challenge for many schools. In terms of flow of funds, in Kenya, the MoE funds are disbursed to the schools twice a year, directly into a specified bank account for each school. The account is designated for only the local purchase of cereals, pulses, and oil.

The Ghana School Feeding Programme's procurement is highly decentralised and engages with the private sector to a large degree; it gives contracts to caterers to procure, prepare, and serve food to students in beneficiary schools. While the model instructs caterers to procure from the schools' communities, and source from the district and national levels only when food items are not available, in practice caterers are sourcing the large majority of food from the market regardless of local availability. Caterers are advised to procure 80 % of foodstuffs from local farmers, but this rule has not been enforced.

In India, the School Feeding Programme is largely decentralised, with operations varying throughout the country. It has been reported that there are no local procurement targets as Home Grown procurement is less important in India (as a net exporter of grain). This situation is quite similar to the South African National School Nutrition Programme. The Chile model is characterised by the use of a mathematical auction system; however, this kind of procurement model excludes small local producers.

In terms of flow of funds:

- Chile- the JUNAEB controls the SFP budget and pays the private contractors for the number of meals served in the previous month.
- Brazil - the funds are disbursed from the FNDE to all the municipalities across Brazil. As from 2001, the transfer became a regular arrangement of ten instalments per year (each instalment is expected to cover food for 20 school days)
- Kenya - the Ministry of Education funds are disbursed to the schools twice a year, directly into a specified bank account for each school. The account is also designated for only the local procurement of cereals, pulses, and oil.
- Ghana – the state gives contracts and funds to caterers (local traders) to procure, prepare, and serve food to students in beneficiary schools.

Community involvement

In Brazil, Ghana and Kenya, community participation in the SFP is very strong at school level. The school procures fruits, bread, vegetables and other foodstuffs from local producers with financial support from the local municipal government. In Chile, the procurement of SFP foodstuffs falls under the operation of those food service providers who have won an auction. Therefore, the programme does not appear to have much community involvement, specifically for local farmers.

Brazilian School Feeding Case Study

The example of the Brazilian school feeding programme shows that it is possible to link food production, school meals and nutrition education through comprehensive programmes and policies. According to FAO (2005), the school feeding programme in Brazil has been placed

in the framework of food security policy and aims to reduce the number of malnourished children and improve the school enrolment rate.

In 1994, the Brazilian government introduced a law that obliges each municipality or state government to create a School Feeding Committee (Conselho de Alimentação Escolar, or CAE), which mainly functions as the fiscal body for the Brazil National School Feeding Programme (PNAE) at the local level. A School Feeding Committee usually consists of one executive representative (from the municipal or state Secretariat of Education), one legislative representative (from the municipal council), two representatives of teachers, two representatives of parents (usually elected members of the Parents and Teachers Association) and one representative of a related segment of civil society, such as the Rural Workers' Syndicates, producers' associations or NGOs that support these producers. The members need to be re-elected every two years. By 1996, 3 257 municipalities across Brazil, principally state capitals and cities with more than 50 000 inhabitants, participated in School Feeding Committee institutions and this 'municipalisation' process (Spinelli & Canesqui 2002).

In a decentralised PNAE, regions and locales throughout Brazil have different patterns of local participation, networks, procurement mechanisms, financial arrangements and governance structures. Brazil is a federal republic consisting of states that maintain a certain degree of autonomy in deciding these matters. Moreover, all the municipalities in Brazil have the same rights and obligations in national policies, whether it is São Paulo with a population of over 15 million or a small interior municipality of the North with 8 000 inhabitants. Therefore, the outcomes of the same 'municipalisation' policy can vary significantly from one municipality to another.

The institutional arrangements for operating PNAE at a local level can be classified into five types:

- municipality-oriented: the municipal government represents the executive power of the school feeding programme and passes its decisions to municipal and state schools in the municipal territory;

- state-oriented: the State Secretariat of Education represents the executive power and passes its decisions to state and municipal schools in the state territory;
- school-oriented: each school receives and manages its own portion of the budget;
- a mixture: some of these management arrangements coexist in a municipality (Pipitone 2003);
- private companies: local governments commission private companies to carry out the school feeding operation.

Eighty per cent of the municipalities use the municipality-oriented school feeding approach, though most of them have experienced several different modalities. In general, the tendering process is closely linked to menu development, which aims to achieve nutrition intake (15-30 per cent or recommended daily intake) as directed by FNDE (FNDE 2007). The nutrition intake usually focuses on vitamins, proteins and iron, which are mostly contained in fresh vegetables, fruits and meat. Fresh perishable produce is sought from local farmers, while public tendering is mostly done for basic non-perishable foodstuffs, such as rice, beans, flour, salt, sugar and oil. Some municipalities and schools, in particular in the South, have created school or community gardens (horta comunitária) to produce basic vegetables on their own.

For example, in the municipality of Castanhal in the northeast of Pará, nearly 60 per cent of ingredients for school meals are regional products provided by small-scale farmers and extraction workers' cooperatives (Coordenadoria de Merenda Escolar, Castanhal, 2007). The regional products include açaí, cassava flour, tapioca flour and cupuaçu fruit. Vegetables such as lettuce and cabbage are produced at a collective farm (horta coletiva) that was implemented as a residential project in an urban periphery of the municipality.

2.10 Analysing the relationship between school feeding programmes and inclusion of smallholder farmers in Ghana, Mali and Kenya

Ghana, Kenya, and Mali all implement school feeding programmes differently, and have different procurement modalities, as indicated in Table 2.2 below.

Table 2.2 relationship between school feeding programmes and inclusion of smallholder farmers in Ghana, Mali and Kenya

	Ghana	Mali	Kenya
Coverage	170 districts in whole country	166 poorest municipalities	28 districts
No of schools	1775	651	1711
Food rations	rice, beans, maize, plantain, gari, cassava, oil, some vegetables, meat and fish	cereals, beans, oil (gov.) + vegetables, groundnuts, spices, dried fish (parents)	beans, maize, oil
Procurement regulation	None, Ghana School Feeding Programme not under Public Procurement Act (2003)	Public Procurement Code (1995) + revision for decentralisation (2010)	MoE guidelines; Public and Disposal Act (2005) not effective at school level
Implementation	District Assembly selects caterers, who buy food, store, and provide meals	municipality buys food from selected traders; School Management Committee in charge of storage and rations	schools buy the foodstuffs from selected suppliers; store and hire cooks

The Ghana School Feeding Program (GSFP) has a target of 80 % of the foodstuffs to be bought from smallholder farmers. Ghana also uses the "caterer model." Under this model, the District and Municipal Assemblies hire caterers to supply meals to designated schools. One caterer may service a maximum of three schools. This procurement of services is, in principle, done through open tendering. The caterers purchase foodstuff from different suppliers for preparing school meals.

In Kenya, there is no specific target that has been set for a specific percentage of food to be bought from local farmers. The "school model" is being used in the Home Grown School Meals Program (HGSM) whereby schools are mandated to undertake procurement of

foodstuff and other goods and services used in preparation and supply of meals to pupils. Schools use a public procurement process for this purpose, which involves a competitive bidding process. Interested prospective bidders, usually traders and other enterprises are invited to participate through public notices and advertisements.

The Malian school feeding program (ALISCO) requires that 50 % of foodstuffs be bought from smallholder farmers. The procurement modality in Mali has some similarity to the one in Kenya and is called the "school canteen model." In this model, the schools establish canteens that are used for the preparation and supply of meals. *Comités de Gestion Scolaires* (CGS)—comprised of representatives from the community and school—are appointed for each school canteen. CGSs do undertake minor purchase of food ingredients, such as the salt, cooking oil, and spices that are used in preparing meals. However, the bulk of procurement of major foodstuff for school feeding, such as rice and millet, is undertaken by local government authorities in Mali.

In terms of disbursement of funds, funding for the governments' school feeding programs in Ghana, Kenya, and Mali have come from central governments through the annual budget process. In Ghana, funds for school feeding are provided from the annual budget of the Ministry of Local Government and Rural Development. Funds then flow through the Ghana School Feeding Program Secretariat to District/Municipal/Metropolitan Assemblies who, eventually, effect payments to caterers.

Caterers were expected to commit to pre-financing procurement of foods that they buy for preparation of school meals, and then make requests for payments later. The survey revealed that payments to caterers for their services have taken up to three to four months. For instance, at the beginning of the third school term of 2012, caterers in Ghana did not receive payments for foods/meals that they supplied to schools during the second school term of 2012, which was a period of three to four months. The caterers indicated that this practice makes buying from smallholder farmers difficult as the latter require immediate payments, which puts pressure on the caterer's liquidity capacity. Buying from traders can more easily be done on credit.

In Kenya, school feeding funds are provided by the central government through the annual budget of the Ministry of Education. From there, the funds are disbursed to respective schools for procurement and the implementation of school feeding programs generally. Funds for school feeding in Mali are also provided by the central government through the annual budget of the Ministry of Education. These funds are subsequently directed to regional administration offices and then to respective districts, which undertake procurement of foodstuff for school feeding.

In 2012, both Kenya and Mali faced stagnation in the disbursement of funds for school feeding. In Kenya, there seemed to be a lack of political will to support the transfer of school feeding from the World Food Programme (WFP) to the national government and, although the budget was allocated, funding was not disbursed. In Mali, failure to disburse funds was caused by the political situation, in which extra government funds were directed towards defence.

2.11 Summary of key learnings and challenges from the countries examined

Key Lessons learned

- In Brazil, India and Chile, the SFPs are tightly integrated with their national policies. The stakeholders associated with school feeding programme range from Ministry of Education to Agriculture, from to Rural Development to Health.
- Delays in the release of funds - procurement must make a substantial part of the payment to suppliers up front. There is no evidence that up-front payments are being made in the countries reviewed.
- Lack of institutional policy - many school feeding programmes at the national level lack integration across government ministries.
- Procurement at the decentralised level is the best way to ensure that locally-produced foods are bought for the programme. Under decentralised system, the SFP is managed at school level – funds are directly disbursed twice a year to the designated school bank accounts.
- Most of the School Feeding Programmes' menus are designed to suit the commodity availability and handling at the national level. Adapting the menu to incorporate local

production can increase the use of fresh produce/products (vegetable and fruits). Encouraging inclusion of more locally-produced products in the menus will be helpful.

- Many farmers are not aware they are the base of the SFP supplies. Traders buy the goods from farmers and distribute the products, without the farmers knowing the consumption/market channels.
- On-farm and school storage affects procurements strategies as without proper storage, farmers are forced to sell at harvest time and cannot sell evenly throughout the year to the schools. In this case, it would be difficult to procure food from smallholder farmers on a weekly basis throughout the year since food would only be available during harvests. A school feeding programme needs to be backed by a reliable storage and warehouse system in order to ensure food availability at all times.

Key Challenges

- Administrative burden – Buying local often means purchasing from many farmers, which increases administrative paperwork.
- Localisation of school feeding menu – when procuring for a contracted distributor, language should be included in the bid and contract that stipulates that local food purchases occur, when possible, and that local food items are identifiable upon delivery to the district.
- The feeding cost per child does not match with the current prices of food commodities, coupled with the constant delay in releasing funds to caterers for meals prepared in advance.
- Sufficient infrastructure necessary for school feeding (storage at schools, adequate kitchens, on-site clean water resources, or cooking pots and utensils) is not always available.
- There is a lack of adequate knowledge, and a lack of uniformity in procuring foodstuffs and in managing the school feeding programme at the district level.
- Delays in disbursement and poor distribution arrangements.
- Small-scale farmers face difficulties in complying with the legal requirements of the programme, such as invoicing, quality control and delivery arrangements.
- In countries that use centralised systems, like Chile, the SFP does not necessarily contributing to the local economy.

2.12 SUMMARY

Different approaches can co-exist in the same country, where, for instance, school feeding programmes using locally-grown produce are owned by decentralised institutions (e.g. individual states in Brazil or India), or where agencies like the World Food Programme complement the national Home Grown School Feeding (HGSF) programmes (e.g. Ghana and Kenya). One aspect of this work is not to determine which HGSF model is 'best' (since, for example, the Indian model is unlikely to be politically viable in Kenya), but rather what efficiencies or innovations can be shared across the different country contexts.

However, Brazilian small farmers face difficulties in complying with the legal requirements of their programme, such as invoicing, quality control and delivery arrangements, and in the interior, local politicians often favour their relatives in procurement processes. To respond to this problem, the state has promoted a regionalised procurement process.

CHAPTER THREE

THE PROCUREMENT MODALITIES OF SCHOOL FEEDING PROGRAMMES IN SOUTH AFRICA

3.1 INTRODUCTION

In a nutshell, this chapter first reviews the different procurement modalities applied by different programmes and briefly presents the food items included in the school feeding scheme and the procurement basis for these food items, as well as estimating the food items required in the study area. To establish the stability of the NSNP market in the study area, this chapter provides a full section showing how estimates are made for food items required by schools in the study area. To establish whether the NSNP have become an important market for smallholders, the dissertation provides further analysis of the process used by schools to acquire food. Briefly, this process will ascertain who buys the food, who does the budget for school feeding meals, and the payment procedure.

The primary aim of this chapter is to investigate the current role of school feeding programmes as a vehicle for improving market access for smallholders. A school survey questionnaire, informant interviews with NSNP (National School Nutrition Programme) District Coordinators, and document analysis were used as instruments to gather the data used in this analysis.

According to the Education Management Information System (EMIS)[10], there are thirty-eight (38) schools in the study area. Two of the schools do not have school feeding schemes in place since they are regarded as urban-based schools. Thirty-two (32) schools out of thirty-four (34) schools responded to the survey questionnaire. This was a response rate of 97 %. This response rate is significant because this paper can speak with good authority on what is happening with regard to school feeding schemes across all schools in the study area.

[10] http://www.education.gov.za/EMIS/tabid/57/Default.aspx.

The study was intended to ascertain whether schools have proper hygienic storage facilities for perishable products, such as vegetables. Therefore, the issue of storage will be discussed in further detail to understand food storage facilities and the current storage facilities used by the schools. The dissertation also aimed to establish how much is produced from the school garden, the average size of the school garden, and the incumbent who manages the garden.

According to Masset and Gelli (2013), providing food through schools has well documented effects in terms of the education, health and nutrition of school children. However, there is limited evidence in terms of the benefits of providing a reliable market for smallholder farmers through school feeding programmes. Hence, this study is aimed at investigating the potential impact of school feeding programmes sourced from smallholder farmers on smallholder food security, and the small processors.

Drake *et al*. (2012) argued that by purchasing foodstuffs through local suppliers, school feeding programmes provide a structured demand for agricultural produce (Masset & Gelli, 2013). This, in turn, can stimulate not only an increase in agricultural production, but also an environment whereby small-scale farmers enjoy more security and are thus able to take calculated risks to invest in their farming activities, such as through improved seeds, fertilisers and technologies. Furthermore, Drake *et al*. (2012) argued that domestic procurement is being actively evaluated by countries and development partners as a means of achieving sustainable school feeding programmes, and at the same time, for using the purchasing power of the school feeding programme as a stimulus for the local agricultural economy. As such, the local purchase of food for school feeding is seen as a bridge that connects smallholder farmers with local markets and force multipliers, thus benefiting children and the local economy at the same time. By linking up to domestic markets, such as a school feeding scheme, smallholder farmers and small processors will have the opportunity to develop and modernise production processes that will increase their competitiveness in this market (Drake *et al*., 2012; Masset& Gelli, 2013).

3.2 BRIEF OVERVIEW OF DIFFERENT PROCUREMENT MODELS USED IN SOUTH AFRICA

3.2.1 Centralised system: Mpumalanga, Limpopo, Western Cape and Gauteng

The procurement model used by Mpumalanga, Limpopo, Western Cape and Gauteng is a centralised model of procurement using an open provincial tendering system. The specifications for the tender are developed in the NSNP Unit in each province. The tender specifications are subsequently sent to the Bid Specification Committee and after approval, the document is sent to the Central Tender Office that provides a tender number and advertises the tender. Tender applications are made available through local and national newspapers to ensure accessibility. The criteria for successful applicants are based on the ability of the service provider to undertake the task. Historically disadvantaged individuals from local communities are given preference, in line with the Procurement Preference Policy (KZN Department of Education NSNP Guidelines, 2010). However, there is little evidence that the smallholder farmers are benefiting from NSNP.

The Evaluation Committee evaluates each of the applicants, based on a set of criteria. The NSNP Unit is not a participant in this committee and does not even have observer status. The short-listed service providers are then submitted to the Bid Committee where senior managers, such as the three deputy director generals, evaluate the tenders against a set of criteria. Thereafter, contracted service providers are entrusted with the responsibility to supply the schools with the food, based on a set menu and calculated on the number of children to be fed per school and the quantities to be supplied for the number of feeding days per month. Furthermore, the supplier also acts as an agent to facilitate the payment of voluntary workers who prepare and serve the meals at schools on behalf of the department.

Payment procedures using a centralised system in the above-mentioned provinces are as follows:

- The National Department of Education transfers NSNP funds to provinces;
- The Provincial Department of Education (PDE) monitors the entire NSNP budget for the province and transfers funds into the service provider's authorised bank account

for valid claims and tax invoices received;

- The PDE process NSNP claims and authorises payment to contracted service provider(s); and
- Under the centralised system, schools do not pay the service provider but instead they check the invoices against the set menu and they also sign the delivery form.

3.2.2 Decentralised system: North-West, Free State, Eastern Cape and Northern Cape

In North West, Free State, Eastern Cape and Northern Cape, the school feeding programme has since resumed[11] with funds being directly transferred to schools (NSNP national report). This model is called a decentralised model of procurement (transfer of funds to schools) which means that school officials are responsible for selecting and contracting suppliers and ordering and receiving supplies. Schools are responsible for the procurement of their own food using a quotation system, their own equipment and utensils, as well as the appointment and payment of Volunteer Food Handlers (VFHs) who assist in preparing, cooking and serving meals. The schools request quotations from suppliers and compare these quotations on a like-for-like basis. Lastly, they evaluate and select the supplier they intend to use.

The payment procedure using a decentralised system in the above-mentioned provinces is as follows:

- The National Department of Education transfers NSNP funds to provinces;
- The Provincial Department of Education monitors the entire NSNP budget for the province and transfer funds to schools directly;
- Each school has a separate NSNP bank account;
- Schools select their supplier (s) by requesting for quotations, comparing these quotations, evaluating and selecting the supplier they intend to use. These comparisons also limit the participation of farmers.
- After selecting their preferred supplier (s) then they enter into a contract with supplier;

[11] Centralised system stopped in 2010, 2011 and 2012 in North West, Free State, Eastern Cape and Northern Cape, respectively.

- Thereafter, the preferred supplier delivers food supplies based on a set menu and student enrolment;
- The NSNP Unit at the district office monitors the feeding at schools; and
- School officials process NSNP claims and authorise payment.

3.3 THE COMPOSITION OF THE FOOD BASKET FOR SCHOOLS

All South African schools are currently using a cooked menu, as opposed to the past where they used only a cold menu. The school feeding menu shifted from providing only staples and now also includes seasonal agricultural produce such vegetables and grains. However, this directive was not meant to support local farmers but to enhance the nutritional content of the food basket for the children (KZN Department of Education NSNP Guidelines).

Currently, the composition of the school feeding basket set out in Table 3.1 below was designed by a nutrition expert and the KZN Department of Education NSNP officials. However, it is evident that local producers (farmers) and school principals were not involved in the design of the school feeding menu. According to the menu designed by the KZN Department of Education, all schools are required and obliged to use the standardised menu as illustrated in Table 3.1 below. The food basket is made up of starch and protein (such as maize, rice, samp, beans, and pilchard stew), and raw and frozen vegetables, such as cabbage, carrots, spinach, and butternut/pumpkin.

Table 3.1: Illustration of the food basket offered to learners in surveyed schools in KZN.

Day of week	Food item	Raw quantity per learner per day
Monday	Soya Mince Relish	30g
	Rice	50g
	Cabbage/Fruit	40g
Tuesday	Beans	30g/40g
	Phuthu (Maize meal)	70g
	Carrots	40g
	Vegetable breyani (Optional)	40g
	Pilchard stew	40g
Wednesday	Rice	50g
	Spinach &Tomatoes for fish	70g/10g
Thursday	Beans	40g
	Samp	40g
	Pumpkin/Butternut	40g
	Pilchard Stew	40g
Friday	Rice/Bread	50g
	Fresh Mixed veg& tomatoes for fish	30g/10g

Source: Own elaboration based on data from KZN NSNP Menu, (2013)

Most of the farmers in the study area are obliged to sell their crops to traders at the extremely low prices that prevail during the harvest season. Therefore, the additional market provided by the NSNP could allow local farmers to deliver their produce to schools. It is clear that the NSNP food basket illustrated above seems to represent a significant portion of vegetables produced locally. This might suggest that the crops currently in the highest demand (cabbage, carrots, maize meal, tomatoes, onion and pumpkin/butternut) can be sourced locally.

3.4 VOLUMES REQUIRED FOR SCHOOL FEEDING PROGRAMMES IN THE STUDY AREA

The quantity of typical food demanded by each school for any given period can be obtained by using the menu in Table 3.1 above, which sets the type of food item served on each day of the week per learner per day. According to the current procurement modality, schools are expected to place orders using the KZN standardised menu and to check the quality and quantity of all foodstuffs, as well as informing the supplier of the time of delivery of supplies.

However, it appears to be difficult for schools to determine the weight of delivered fruit and vegetables as no facilities for weighing were available at any of the schools. Despite this shortfall, the findings show that verification is better with packaged and other labelled foods, such as maize meal, rice, samp and other ingredients. For those schools with gardens, the contracted supplier is obliged to enter into an agreement with that school which has vegetable garden. Furthermore, this agreement obliged the supplier to pay the school according to the quantities of vegetables harvested from the school garden.

The procurement basis is determined by the availability of storage space or facilities available and the perishability of the foods. Findings in Table 3.2 below indicate that all fresh vegetables in the study area were delivered on a weekly basis, whereas food items such as maize meal, samp, rice and other ingredients were delivered on a monthly basis.

Table 3.2: Illustration of food procurement frequency

Procurement basis	Food item
Weekly	Cabbage,
	Carrots,
	Spinach,
	Butternut/Pumpkin,
	Tomatoes& Onion
Monthly	Fruit in season,
	Maize meal,
	Samp, Rice
	and other ingredients

Source: Survey (2013).

All food items are delivered by contracted service providers through a tendering procurement system. Owing to the scope of the study, food items such as soya mince relish, samp, pilchard stew, frozen mixed vegetables and seasonings, like iodised salt and curry powder, were excluded from the analysis because it is not possible for farmers to provide the aforementioned foodstuffs because they do not have the capacity and the means to do so. In terms of pilchards, there were no fish producers and processors for pilchards, and very few schools had proper refrigeration. In any case. the pilchards are all tinned.

The schools surveyed reported that they all used a set menu and the number of learners enrolled was used to calculate the quantities of each item that needs to be delivered. To compute the food required to be delivered to schools for any given period, the portions per learner per day, as listed in Table 3.1 above, were used to establish the volumes needed per day for the schools surveyed in the study area.

For the purpose of illustrating the methodology, we used the data/menu from the surveyed schools in the study area (two schools were selected as an example, namely Sinethezekile Combined School and Nsimbane J Primary School). Variables, such as enrolment, amount per learner per day, and number of feeding days, are crucial in these estimates. However, in terms of the number of feeding days, it is noticeable that the food served on a daily,

weekly, monthly, and quarterly basis differs according to the consumption frequency of that particular commodity stipulated in the menu in Figure 3.1. In order to derive the number of feeding days per month, the number of feeding days per week is multiplied by the number of weeks in a month. Therefore, the number of feeding days per week is multiplied by four. The same procedure is also used to derive the number of feeding days per quarter. Table 3.3 below shows the frequency of the number of days served daily, weekly, monthly and quarterly.

Table 3.3: Consumption frequency of foodstuffs per week, monthly and quarterly

Food item	No of feeding days per week	No of feeding days per month	No of feeding days per quarter
Maize meal	1	4	12
Rice	3	12	36
Samp	1	4	12
Cabbage	1	4	12
Carrots	1	4	12
Onion	3	12	36
Tomatoes	3	12	36
Butternut/Pumpkin	1	4	12
Beans	1	4	12
Spinach	1	4	12

Source: Own compilation based on the menu

To establish the total quantity required the following calculation is followed:

Amount per learner per day × Number of learner's enrolled × Number of feeding days for that item=Total quantity required

Table 3.4: School One: Sinethezekile Combined School (enrolment: 1258)

Food item	Raw quantity per learner per day	Kg needed per week	Kg needed per month	Kg needed per quarter
Maize meal	70g	88	352	1056
Rice	50g	189	756	2268
Samp	40g	50	200	600
Cabbage	40g	50	200	600
Carrots	40g	50	200	600
Onion	5g	19	76	228
Tomatoes	5g	40	156	468
Butternut/Pumpkin	40g	50	200	600
Beans	40g	50	200	600
Spinach	70g	88	200	600
Total	**420g**	**674 Kg**	**2540 kg**	**7620kg**

Table 3.5: School Two: Nsimbane J Primary School (enrolment:73)

Food item	Raw quantity per learner per day	Kg required per week	Kg required per month	Kg required per quarter
Maize meal	70g	5	20	60
Rice	50g	11	44	132
Samp	40g	3	12	36
Cabbage	40g	3	12	36
Carrots	40g	3	12	36
Onion	5g	1	4	12
Tomatoes	5g	3	12	36
Butternut/Pumpkin	40g	3	12	36
Beans	40g	3	12	36
Spinach	70g	5	20	60
Total	**420g**	**40 Kg**	**160 Kg**	**480 Kg**

Further, on Wednesdays and Fridays, an additional 5 g of tomatoes is required for fish. Onions and tomatoes are applicable in all the menus, but during the survey these commodities were consumed three times in a week. On average, rice, tomatoes and onions are used in school meals three times per week. Maize and other vegetables, such as pumpkin/butternut, spinach, cabbage and carrots, were consumed once per week. However, rice production is not taking place in the study area and there is a surplus of maize but there are no local small-scale maize processors.

Lack of value addition, such as grading and packaging of vegetables and milling of maize, might pose a significant barrier to the school feeding market. Rice demand increases because of the consumption per week. Rice is part of the menu three times per week, and each learner receives 50 g of rice per day. Clearly, the food ration standards developed were not based on local production. In addition, the NSNP prescribes a processed food, maize meal, although smallholders do not have the capacity to process their maize.

Table 3.6 below represents the total demand of food required by the thirty-two (32)

surveyed schools, with a total enrolment of 13 500 learners, and we estimate that these 32 schools need a total of 76 tons per quarter. The table below reflects that rice comprises the largest demand portion of the NSNP, and the second food item is maize meal, demanding almost a ton per week.

Table 3.6: Quantifying the foodstuffs in the school feeding basket in the 32 surveyed schools (as of August 2013)

Food item	Current NSNP demand Kg per week	Current NSNP demand Kg per month	Current NSNP demand Kg per quarter
Rice	2086.55	8 346.2	25 038.6
Maize meal	974.05	3 985.8	11 957.4
Tomatoes	417.15	1 668.6	5 005.8
Carrots (fresh)	556.2	2 224.8	6 674.4
Onion	208.61	834.44	2 503.32
Cabbage	556.2	2 224.8	6 674.4
Spinach	556.2	2 224.8	6 674.4
Pumpkin/Butternut	556.2	2 224.8	6 674.4
Beans	417.15	1668.6	5 005.8
Total	**6 328.31 kg**	**25 402.84 kg**	**76 208.52 kg**

The above estimation shows that the NSNP market is structured and predictable, and hence, a reliable market for smallholder farmers. It was also noticeable that the surveyed schools merely verified the quantities of food as they appeared on the supplier's receipt and they reported that they do not have verification mechanisms in place to check whether they are receiving the correct quantities of goods, such as vegetables. The schools also highlighted the point that they receive most of their vegetables in boxes and crates. Thus, there is little evidence that the schools received the accurate quantities of goods, such as vegetables.

Table 3.7: Incorrect volumes of food items delivered to schools

School	Food item	Quantity ordered by a school (KG)	Quantity on invoice (KG)	Loss/undelivered
A	Maize meal	20kg	10kg	10kg
B	Cabbage	12kg	5kg	7kg

Even though the prices of food under NSNP are fixed, the findings in the estimates (Tables 4.4, 4.5 and 4.6 below) confirm that the demand from NSNP is reliable. In addition, this procedure can be viewed as a vehicle for improving market access as it provides a secured and a stable market. Inevitably, the demand for NSNP foodstuffs will continue to increase with learners' enrolments and additional new beneficiary NSNP schools. Therefore, the inclusion of smallholder farmers in this market will not only provide a guaranteed market but also help them to grow from being subsistence farmers to commercial farmers through increased income, improved technologies and high productivity.

The required food needs for NSNP were not communicated to the Department of Agriculture to support the links between food production and the school feeding market. The NSNP should create a formalised communication process that allows information to be shared between producers and schools with regard to the demands from the school feeding market. This can be done by estimating the total quantities of foodstuffs that can be sourced locally and matching this with a production plan from the Department of Agriculture. The key informants with current suppliers seemed agreeable to increasing local purchasing. However, they felt that they lacked knowledge concerning local growers with adequate supply and delivery mechanisms and they reported that they do not have time to coordinate and organise this.

Table 3.8: Comparison of enrolment and farmers per vicinity of school (15 schools selected out of 32 schools surveyed)

Name of school in abbreviation form	Enrolment (August 2013)	Number of farmers in vicinity of school
MAPH	661	8
KWMAKH	435	6
MADL	187	7
KWAQON	268	5
EZBKW	1268	7
MMZ	397	4
ESTHE	188	10
NKNGLA	152	6
NBY	231	9
ST	190	8
TSHNN	246	5
OGZN	308	8
MHKZ	514	4
MUTH	355	5

3.5 PROCESS USED BY SCHOOLS TO PROCURE FOOD

According to KZN NSNP operational guidelines that were published in 2009/10, the school feeding programme has changed, with funds being directly transferred to schools and schools were responsible for procurement of their own food using a quotation system. However, during the field survey, schools were no longer responsible for procurement of their own food using a quotation system. From the surveyed data, it appears that KZN has shifted from a quotation system to an open tendering system. The signal for the shift is shown by the lack of ownership of the NSNP at school level, since none of the school staff members (Principal, Teacher and SGB) was responsible for purchasing school meals and 100 % of schools surveyed indicated that they only place orders for school meals and they are no longer taking part in the selection of service providers. Furthermore, the NSNP Educators only check the quantities delivered and the service providers' claim against the

service rendered and the school principal endorses the claim by the service provider.

All food items are delivered by contracted service providers through a tendering procurement system. As compared to other tendering procurement systems used by Mpumalanga, Limpopo, Western Cape and Gauteng, the KZN NSNP is different in that service providers from other municipalities or provinces are restricted to rendering services. In addition, the NSNP in the study area reported that they strictly appoint local service providers. The contracted supplier delivers goods and supplies to the allocated schools, using the specified men and then provide the schools with a delivery note and invoice. Regarding the yield from a school garden, the contracted suppliers enter into an agreement with a school that has a vegetable garden. The contracted supplier is also responsible for all the logistics, such as packaging and processing of the supplies.

From the discussion with a key informant that is a contracted supplier, it is evident that all the schools surveyed received food via a trader or middlemen. In this case, all food items came through distributors or middlemen, while nothing came from farmers and retail supermarkets because the procurement procedures do not allow these schools to purchase food since the current procurement model restricts them. This channel is not ideal because the communities including the local farmers are not directly involved in NSNP implementation. Therefore, there is little authority at school level to determine where food is purchased. The surveyed schools were asked why they were not buying more food from local producers. The majority (62.5 %) of the respondents reported that it is the duty of the contracted supplier to buy food, while 37.8 % of the respondents indicated that the current procurement procedures do not allow them to buy locally.

Table 3.9: Reasons for local procurement/not buying from farmers

	Frequency	Percentage of respondents (%)
It's the duty of the contracted supplier to buy food	12	37.5
Procurement procedures do not allow us to buy meal	20	62.5
Total	**32**	**100.0**

Source: Survey, (2013)

Furthermore, the schools were asked whether they knew where their school meal was produced. Most (90.38 %) of the schools surveyed reported that they did not know whether their suppliers offer locally-produced food commodities, while 9.38 % of them reported that the current suppliers were farmers in the study area. Most of the respondents reported that the availability of local products was not indicated on the marketing materials they receive and they reported that it is the responsibility of the service provider to choose the supplier.

In addition, the majority of the schools surveyed were also unsure of the origins of the food they actually received from their contracted service provider. Many noted that product packaging and invoices do not consistently indicate products' geographic origin, particularly with processed items. As a result, most of the products passing through schools arrive devoid of any identity or connection to the people who grew the food.

Clearly, the procurement system has a major influence and/or impact on smallholder inclusion in NSNP supply chain, but the current procurement system shows that farmers were not currently integrated in the feeding scheme in the study area.

It appears that financial resources required for NSNP in the study area are not yet provided to schools and the onus is still on the Provincial Department of Education to ensure the provision of the funds. The lack of NSNP ownership at school level may potentially lead to a higher risk of corruption and inefficiency owing to ownership of financial resources at the provincial level. Furthermore, bureaucracy may slow down many of the procurement and implementation mechanisms, such as writing contracts, forming cooperatives and

purchasing. However, transferring funds to schools without proper monitoring and evaluation systems may lead to the leakage of funds and poor governance of financial resources of the NSNP.

It is clear that by using a contracted supplier there are fewer multiplier effects for the local economy since it does not provide direct market opportunities for smallholder farmers in the local area, and under the service agreement, the contract does not say anything pertaining to local procurement. Therefore, the current NSNP procurement guidelines limit the possible inclusion of smallholder farmers and limit their participation in NSNP, since all foodstuffs are bought from one channel, which is the supplier using a distributor model. Moreover, there are no instructions or regulations directing suppliers to prioritise local smallholders. In other words, there is no mechanism in place to promote purchases from local smallholders.

By purchasing food supplies outside the beneficiary communities, the contracted service provider is providing no direct market opportunities for farmers and this might limit the potential role of NSNP as a vehicle for improving market access. However, the distributor channel is not ideal because the communities, including the local farmers, are not directly involved in NSNP implementation. The decisions about where to buy supplies, how they are procured and at what cost, are made by the contracted supplier only.

The delivery process seems to be complex since each school has the responsibility to estimate the volume of food required per day. Given that the Department of Education knows before the start of each school year exactly what is to be fed to each school (based on the menu), and how much food should be delivered to each school (based on enrolment figures), there is no reason why it cannot estimate the volumes. An order could therefore be issued to farmers in advance.

3.6 NSNP FUNDING AND BUDGET

The NSNP is funded via a conditional grant allocated to provinces by the National Department of Education, as well as other directives from the Department of Education and National Treasury. It represents the expenditure from the National Department of Education

and revenue received by the KwaZulu-Natal Department of Education. The total conditional grant allocation is calculated as follows:

Number of learners eligible for feeding * Number of feeding days* Cost per meal = Total conditional grant allocation

In 2006 there was an amendment to the process of transferring funds to schools in KZN. The 2006 provincial operational guidelines for KZN stipulate that money or payments should no longer be deposited into the school account. Schools do not account for the School Nutrition Programme directly in their financial statements as these funds do not go through the school bank account. The funds are transferred directly from the provincial budget via NSNP districts offices to the suppliers' respective accounts.

Surveyed schools were asked whether there was a budget prescribed for the school meal or not. Discussion with key informants, such as school principals, illustrated that they did not know whether a budget is followed for the meal because the schools generally had no information regarding the expenditure or budget on food supplies. Furthermore, the NSNP officials at district level were asked about the budget allocation in these schools. Unfortunately, they were not willing to divulge such information about budget allocation per school.

This clearly shows the lack of ownership of NSNP at school level because schools do not have authority to procure supplies for NSNP and the model of procurement does inhibit the ownership of NSNP at school level. Furthermore, the study initially also intended to establish the correlation between foodstuffs demanded and their budget allocation. Therefore, it was difficult to establish such relationship because all the schools surveyed were not aware of the budget allocation in their school.

The majority of schools surveyed reported that the procurement model, or the current system, did not allow them to purchase and procure food supplies, and instead they place orders using the KZN standardised menu and inform the supplier of the time of delivery of

supplies. According to NSNP Conditional Grant, the standard budget is calculated and followed. This also appears to be the general picture across the country when the responsibility for food supplies is coordinated and managed at provincial level. As a result, schools do not have the same level of ownership and this is in contrast to when procurement is done by using a decentralised system.

NSNP authorities have taken control over decisions regarding the financial management and supply chain management of NSNP. Moreover, the contracted suppliers sign contracts with the provincial and district Department of Education. Therefore, no payments are processed at school level. This means that it is not possible to analyse the budgeting allocation of NSNP at school level. Budget allocations differ in terms of primary and secondary schooling. For instance, the current allocation per learner per day in primary schools is R2.18, whereas in secondary schools it is R3.08. This cost per meal is the amount that is budgeted for 2013/14financialyear.

3.7 PAYMENT PROCEDURE

A number of documents are generated monthly in order to process a claim and for the supplier to be paid. These documents are signed, countersigned and double-checked and dated by several different people at school, district and provincial levels. These include a claim form, a tax invoice, and a confirmation of service delivery, a confirmation of number of learners by grade, a purchase order form and a delivery note detailing menu options, ingredients and quantities delivered per month. The claim form is then sent to the KZN Department of Education via the Basic Accounting System for final processing and payment is made directly to the supplier. The payment procedure illustrated below is not a nationwide payment system, since it is only applicable in the study area, namely, KZN.

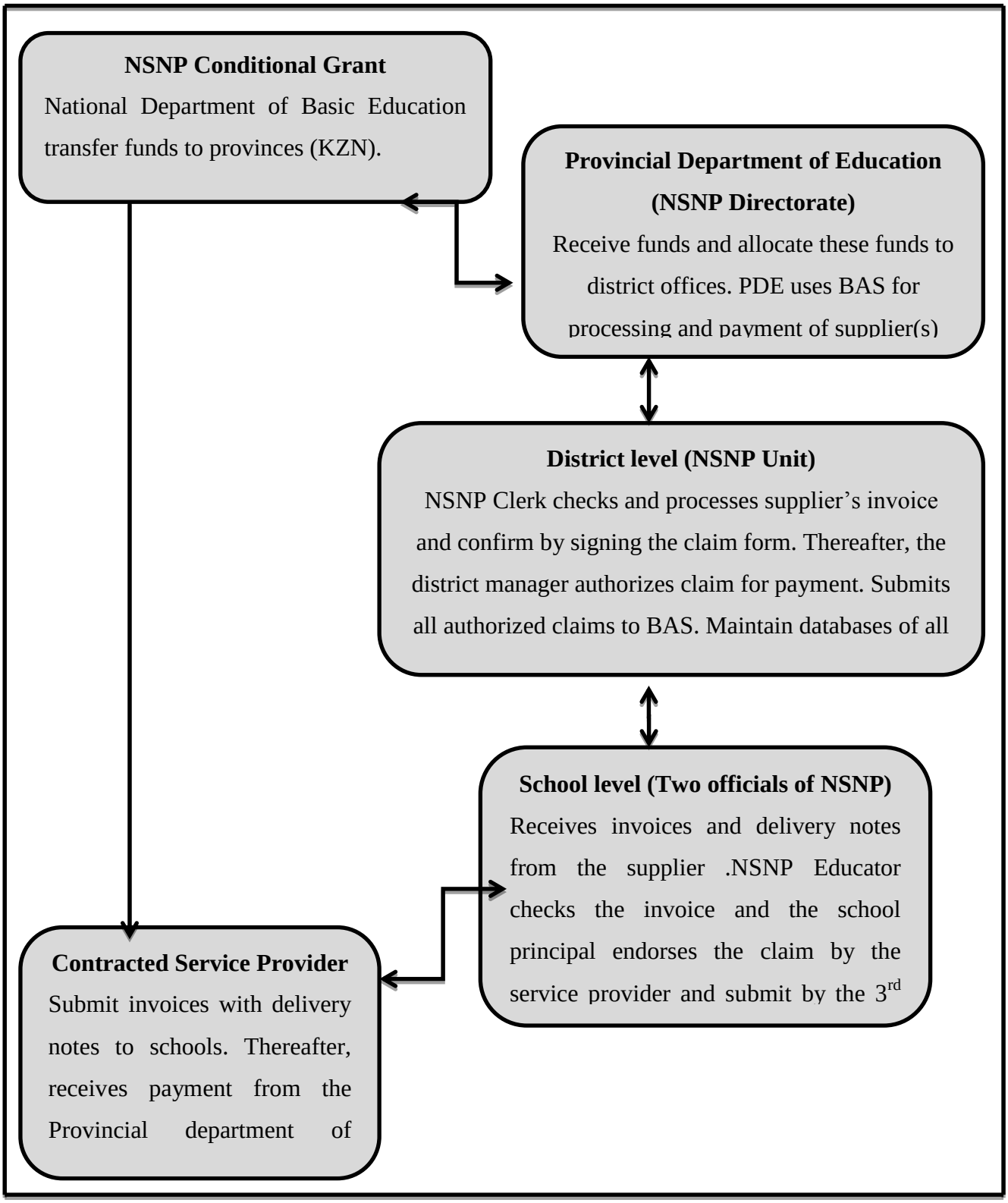

Figure 3.1: Flow of funds from KZN DoE to Service Providers
Source: Own compilation based on informant interview and the survey, (2013)

3.8 SCHOOL STORAGE INFRASTRUCTURE

The study also evaluated the implementation of the NSNP and the infrastructure, such as food storage facilities. The majority (87.5 %) of schools surveyed do not have a secure and hygienic food or specific food storage area. The findings showed that six (12.5 %) schools had a secure food store room and only few schools mentioned that they have refrigerators in their storerooms. The lack of refrigerators also requires that food be prepared from dry, non-perishable ingredients that keep for a long time and also do not need more complex preparations.

Furthermore, schools which reported that they had a secure food storeroom kept their food in general all-purpose storerooms and kitchen cupboards. Most of the schools complained about the inadequacy of kitchen space and cooking facilities and some of them claimed that food had perished in storage areas because of inappropriate and unsanitary conditions. It appears that schools have kitchens on their premises. Some kitchens were initially built only to accommodate smaller numbers of learners, before the quintile system, which has larger numbers, was introduced.

Given the current state of NSNP in the study area, it is unlikely that this storage problem will be resolved for a number of years to come. Clearly, poor storage facilities at schools are limiting menu choices and increase transport costs for suppliers if they have to deliver more regularly.

3.9 SCHOOL GARDEN

Sustainable Food Production is a sub-programme of the NSNP. Discussions with the key informant show that the focus of this sub-programme is to mobilise and support school communities to establish and sustain food production in schools, especially through food gardens. The study intended to ascertain how much is produced in school gardens, the current size of school garden, and who manages the garden. The majority of the respondents (78 %) reported that they have school gardens, while 22 % indicated that they do not have school gardens.

Some schools have school gardens which have been supported through sustainable food production by KZN, DOE (KwaZulu-Natal Department of Education) and food security gardens by the KZN Department of Agriculture. Only 9 (28.1 %) of the 25 schools with gardens do not seem to be functioning at all since there is no evidence of production from these food gardens. The schools with gardens were asked about the approximate size of their garden, and the majority (88 %) of the respondents reported that their school garden size was less than 500 m² (half of a soccer pitch), while only 16 % of the schools indicated that the size of their garden was approximately equivalent to a soccer pitch (500 to 999 m²) and none of these schools possessed a school garden size of that exact size.

Table 3.10: Size of school gardens for the 25 (78%) schools who said they have gardens

Size of the garden	Frequency	Percentage of respondents %
Less than 500m ²	21	88%
500 to 999m²	4	16%
Greater 1 ha	0	0
Total	25	100%

Source: Survey, (2013)

The surveyed schools were asked which crops they grew and how much was produced in their school garden. The major crops grown are carrots, cabbages, butternuts, sweet potatoes, onions and spinach. However, there were only five schools which operated successful school gardens. It is unlikely for school gardens to yield enough crops to have a meaningful impact on the cost of procuring food for each student owing to high demand from the NSNP market.

Even though the study attempted to estimate the quantity of output coming from the school gardens, it was difficult to obtain such estimates because schools did not have records pertaining to yields. Only three out of the thirty-two schools used their production for food preparation. However, the school gardens surveyed cannot yield enough crops to have a meaningful impact on the demand for foodstuffs and the cost of procuring food for each student. Moreover, there is no incentive for a school to report the yield from its school garden to the NSNP.

3.10 SUMMARY

Clearly, the NSNP market is a more reliable and stable market because of the demand for commodity acquisitions. Currently, the NSNP implementation and procurement modality is based upon a contracted service provider/middleman, which in its current state of implementation does not facilitate smallholder inclusion in the NSNP supply chain. The financial management of NSNP (a centralised system, seemingly) does not allow for greater ownership and schools cannot engage directly with food producers, such as farmers. Most of the schools surveyed reported that they did not know whether their suppliers offer locally-produced food commodities, while only three schools reported that the current service provider farm in Jozini. Seemingly, it is the responsibility of the service provider to choose which market to buy from.

Because of the small scale of school garden operation and the production levels, it is clear that the school gardens surveyed cannot yield enough crops to have a meaningful impact on the food required for the school feeding programme in the schools surveyed. Schools generally have no information regarding the expenditure or budget for food supplies and the majority of schools surveyed do not a have secure and hygienic food or specific food storage areas.

CHAPTER FOUR

THE ABILITY OF SMALLHOLDER FARMERS TO PRODUCE AND SELL LOCALLY-PRODUCED FOODS TO SCHOOLS

4.1 INTRODUCTION

It is commonly argued that school feeding programmes have the potential to trigger development processes that benefit not only children in schools but also the community as a whole, including farmers in the beneficiary community. Countries such as Brazil, India, Kenya and Ghana have implemented the local sourcing of produce for school food items from local farmers. Therefore, this study sought to investigate whether school feeding programmes, especially in rural schools of South Africa, have become an important market for smallholder farmers. The primary aim of this chapter is to present findings on the potential of smallholder farmers to supply the NSNP and to establish whether the NSNP, as currently being implemented in the study area, has resulted in better market access for smallholder farmers in the area.

Specifically, the chapter assesses the ability and capacity of farmers for producing food for schools by providing a detailed analysis of their farm structure, farm enterprises and production levels in the study area. The dissertation hypothesised that farmers in the study area could supply all the schools in the community. The study also hypothesised that the current NSNP has not resulted in better market access for farmers.

4.2 SOCIO-ECONOMIC CHARACTERISTICS

4.2.1 Level of education

Educational level was categorised into four categories: no formal education, primary education, secondary education and tertiary education. Empirically, a higher level of education is associated with more knowledge and more access to information. Farmers with tertiary and secondary education levels can more easily understand the dynamics and the requirements of the NSNP market than those who have primary or no education at all.

Thus, lower education levels of the farmers may have an effect on the NSNP procurement mechanism because they will find it difficult to comply with rules for supplying food to schools, for instance, in matters such as contract arrangement, food requirement, invoicing and other related documents. The findings in Table 4.1 below show that most smallholder farmers had secondary education (52.5 %), while 28.8 % had only primary education. Only 18.8 % of farmers had no formal education, and none of these farmers had tertiary education (0%).

Table 4.1: Education levels of the farmers surveyed in the study area

Level of Education	Frequency	Percentage (%)
Tertiary education	0	0
Secondary education	42	52.5
Primary education	23	28.8
No formal education	15	18.8
Total	**80**	**100**

Source: Survey (2013)

4.2.2 Source of income

Efforts were also taken to establish the main sources of income of the smallholder farmers. The sources of income can be divided into two broad categories: farm and non-farm sources. Non-farm sources include welfare grants, remittance, wages and salaries, and other sources. It was found that the main share (45.0 %) of household income was derived from farming, with 27.5 % being derived from welfare grants, such as pension, child support grants and disability grants. In addition, 7.5 % was derived from paid employment and remittances. Other sources of income were derived from economic activities, such as spaza shops and hawkers, which contribute 12.5 % to all sources of income of the sample households.

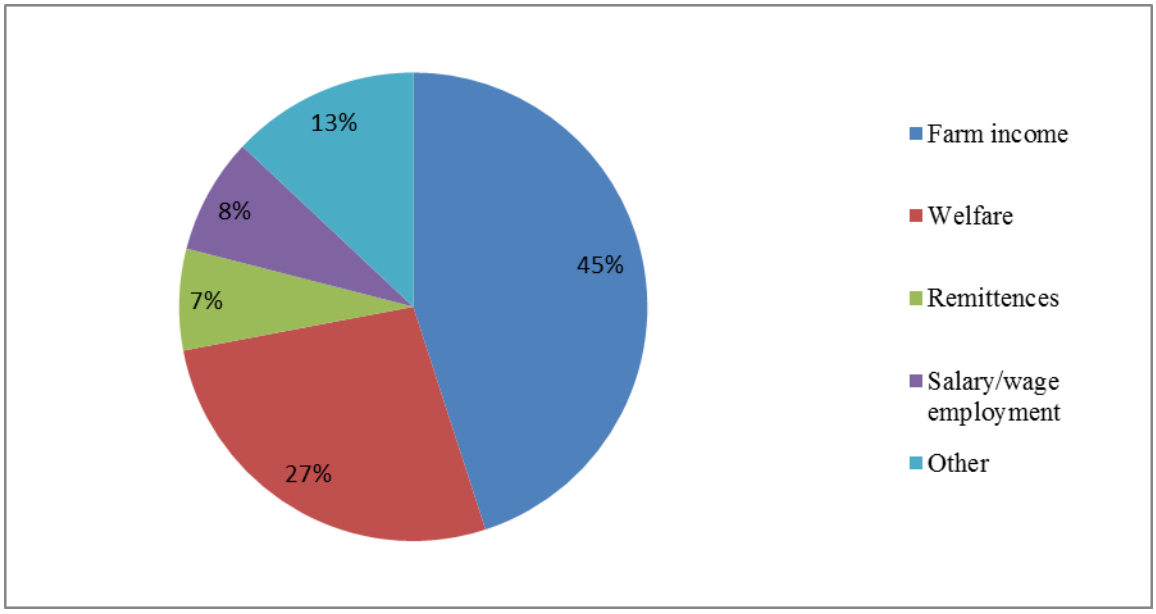

Figure 4.1: Source of income of respondents

The results further indicate that 55 % of the respondents still rely on non-farm income in addition to their farming. The surveyed farmers reported that the income derived from their farm is far less than the expected income, owing to the unavailability of markets.

4.3 ACCESS TO LAND AND CAPITAL

As seen in Table 4.2 below, the majority of the surveyed respondents reported that they had accessed their land through a leasing agreement (87.5 %), and the others reported that they were producing on communal land (12.5 %), while none of them reported that they owned their land. Furthermore, those who accessed their land through a leasing agreement (87.5 %) were located on an irrigation scheme, whereas 12.5 % were relying on rain and boreholes for irrigation purposes.

Table 4.2: Land tenure system

Type	Frequency	Percentage (%)
Own farm	0	0
Renting	70	87.5
Communal	10	12.5
Total	**80**	**100**

Source: Survey (2013)

Because of the nature of the land tenure system in the study area, farmers do not meet the lending requirements of financial institutions owing to the form of land ownership and the lack of collateral security. Consequently, they do not have access to finance for expanding their production output. Small-scale farmers have difficulty in accessing formal credit. Their scale of operations, coupled with their lack of records of their operations, renders them unattractive to financial institutions. Most small-scale farmers rely on their meagre resources in order to finance their farming operations.

Table 4.3 below shows that 12.5 % of the respondents on communal land operated less than five hectares (ha) of land, while 43.75 % of them had farm sizes in the range of six to ten hectares. About 53.7 % of these farmers operate under leasing arrangements on areas ranging between 11 and 15 hectares of land, while only 0.12 % of them had 35 hectares of farm land.

Table 4.3: Distribution of farm size by respondents

Size	Frequency	Percentage (%)
≤ 5 ha	10	12.5
6-10 ha	35	43.7
11-15 ha	43	53.7
≥16 ha	1	0.12
Total	**80**	**100**

Source: Survey (2013)

Discussion with the farmers and key informants show that the farmers are in a good position to benefit from NSNP, since their land is not yet fully utilised because of the unavailability of markets. Discussions with sample households and key informants revealed that labour availability still remains the foremost constraint owing to the lack of markets and poor sales of their produce. However, the majority of farmers reported that they employ casual workers during plantation, weed removal and harvesting period, depending on the availability of the market. Moreover, farmers in the study area use very little technology, if at all. Because of their reliance on household labour, farmers lack the capacity to expand production to meet increasing demand, especially in the short- to medium-term.

4.4 CROPPING PATTERN

It was established that the majority of farmers practise intercropping (60 %) and crop rotation (20 %). Only about 17.5 % of the respondents practise monocropping, while only 2.5 % of them applied mixed cropping. Farmers might face some difficulties in delivering food on a weekly basis because of poor cropping methods. For instance, the study observed that there is no succession planting (several planting methods that increase crop availability during a growing season by making efficient use of space and timing) taking place in the study area, whereas the NSNP market demands a stable and consistent supply of food. Additionally, crop rotation and succession planting is quite useful in meeting the weekly demand of vegetables by the NSNP market.

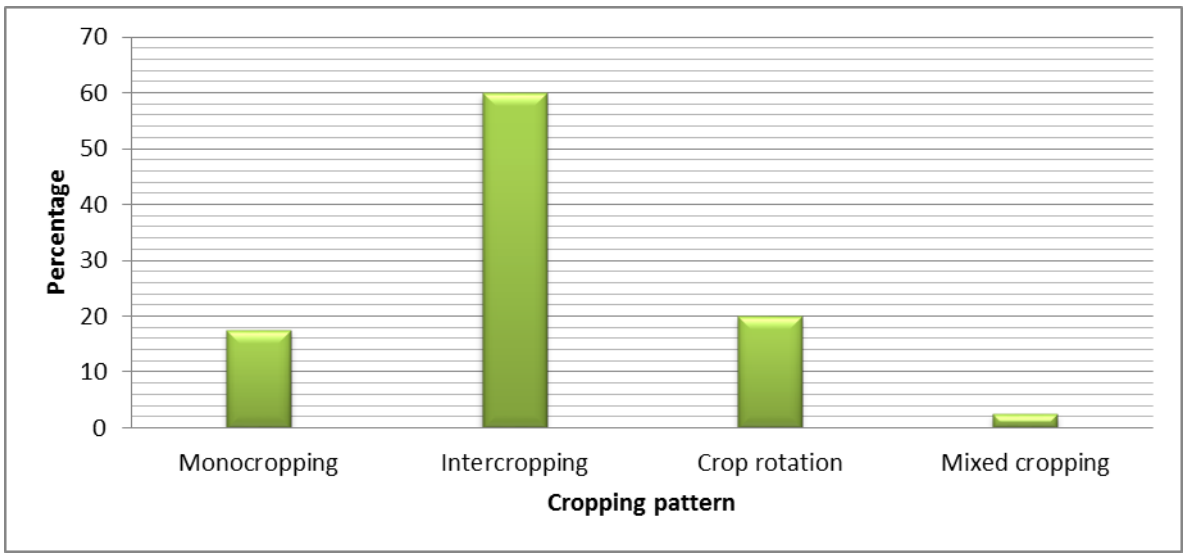

Figure 4.2: Cropping pattern

4.5 CURRENT AGRICULTURAL FARMING ACTIVITIES

The majority of farmers surveyed in the study area produce maize, followed by sugarcane, beans, cabbage, and butternut, as summarised in Table 4.4 below.

Table 4.4: Crops grown by farmers in the study area (n=80)

Crops/vegetables grown	Frequency	Percentage of respondents (%)
Maize	45	56.3
Sugarcane	30	37.5
Beans	25	31.3
Cabbage	21	26
Calabash	15	18.8
Butternut	14	17.5
Amadumbe	5	6.3
Potatoes	4	5
Tomatoes	3	3.8
Sweet potatoes	2	2.5
Spinach	1	1.25

Source: Survey (2013)

Discussions with farmers and key informants revealed that vegetables, such as carrots, spinach, sweet potatoes, tomatoes and onions, are produced by a few smallholder farmers in the study area. These vegetables are produced in a small plot of land of less than one hectare owing to the lack of market access and their intensive care. When asked why they were farming more of maize and sugarcane, approximately 80 % of the respondents reported that they farm sugarcane and maize because of the unavailability of the vegetables market and because it is easier to grow maize and sugar cane, which are also less prone to disease and theft.

Figures 4.3 below and 4.4 below distinguish between the minor and major crops cultivated. It is evident that large quantities of maize, sugarcane, beans, cabbage, calabash and butternut are produced. The level of maize production is high in Jozini, especially for farmers in the irrigation scheme. When asked why they were not farming vegetables, most of the smallholder farmers surveyed raised concerns about the lack of access to a market. Some respondents under rain-fed conditions indicated that the competition for vegetables in Jozini is very high, because those who have access to the irrigation scheme (Mjindi irrigation

scheme) are better off. Other vegetables, such as carrots, tomatoes, onions, and spinach, are also produced in the area, but not in large quantities and are currently only grown by a few farmers.

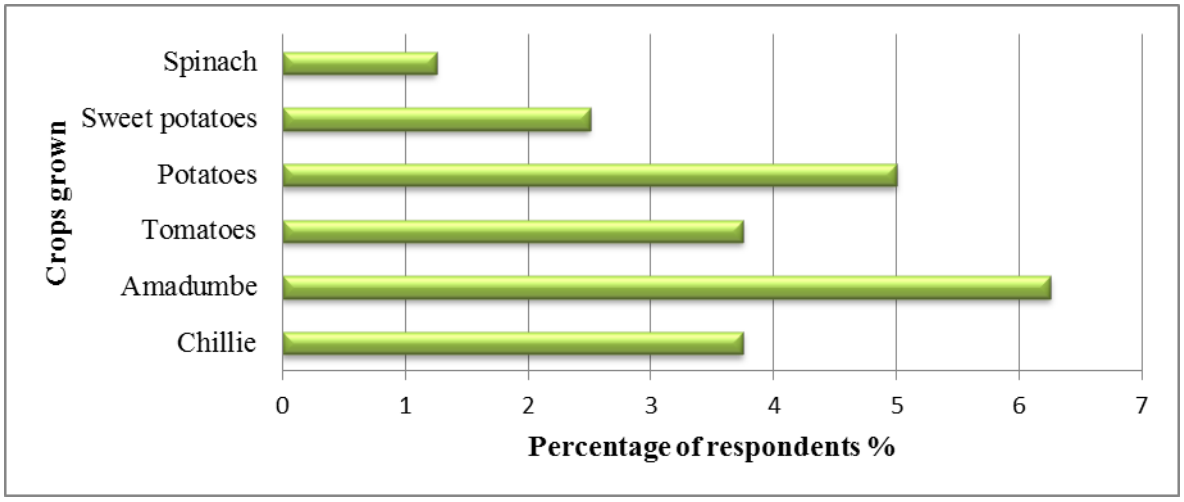

Figure 4.3: Minor crops grown
Source: Survey, (2013)

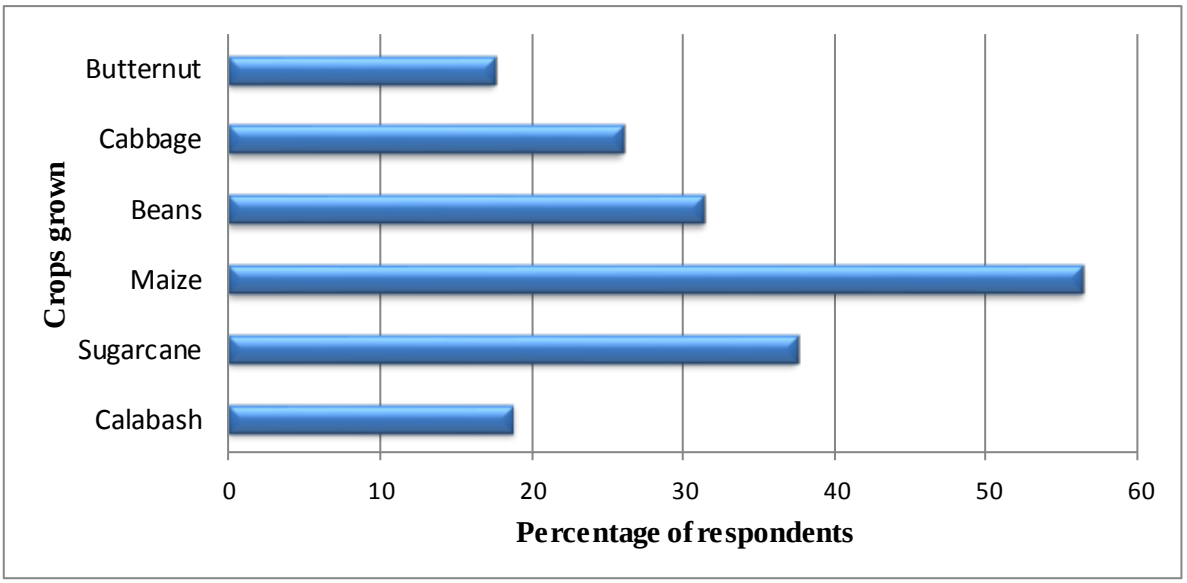

Figure 4.4: Major crops grown
Source: Survey, (2013)

In order to implement NSNP with the idea of integrating smallholder farmers for supplying vegetables to schools, it is imperative for farmers to match their production cycle with the NSNP menu. At the same time, this will inform the schools about the production cycle

taking place in the area, specifically, where and when to get the vegetables/crops. Furthermore, it will help them to make informed decisions during the modification of the school feeding basket. With regard to the production cycle, farmers were asked whether they did cultivate throughout the year, and it was found that 93% of the farmers do farm throughout the year.

Moreover, the study intended to establish the main purpose of farming in the study area. Table 4.5 below illustrates the primary reasons for production of these crops. It is evident that selling is the predominant reason for the cultivation of these vegetables/crops, except for 2 % of the respondents who indicated that their motive behind farming is partially for market and partially for own consumption. What is more, 87.5 % of the respondents reported that the main reason of their production is to sell their produce to the market. None of these farmers indicated that their main reason is to store or process their produce.

Table 4.5: Main reason for production (n=80)

Main reason	Frequency	Percentage of respondents (%)
Selling to the market	70	87.5
Partially for market and own consumption	10	12.5
Processing	0	0
Storage	0	0
Total	**80**	**100**

Source: Survey (2013)

It is, therefore, clear that the quantity produced, such as for maize, beans, cabbage, butternut, and amadumbe (Colocasia esculenta), can be sourced in large quantities from the smallholder farmers. However, maize cannot be sourced directly because the school requires maize meal; it might be difficult for farmers to undertake such value addition since there are no small local processors or millers in Jozini. Crops such as carrots and spinach are not grown by the majority of farmers, but they grow remarkably well in Jozini[12]. That being the case, there is a need for crop diversification in order to meet the stable demand of NSNP.

[12] Agricultural advisors in the study area.

4.6 STORAGE, PROCESSING FACILITIES AND TRANSPORTATION

None of the farms visited have storage facilities, and the study endeavoured to investigate where farmers stored their produce. It is apparent that the majority of farmers rely on the farm gate as the selling point, and they pointed out that it is extremely expensive to construct and maintain storage facilities. Based on the discussions with key informants and observations made during the survey, the farmers lack fundamental knowledge and facts about post-harvest handling practices, and specifically they lack suitable packaging containers and grading facilities. Because of their reliance on household labour, farmers lack the capacity to expand production to meet increasing demand, especially in the short- to medium-term.

The schools receiving NSNP in the study area do not have proper storage facilities. The schools indicated a desire to have their own storage with proper hygienic conditions to prevent vegetables and other foodstuffs from decaying. Therefore, the question is, who should build the storage facility? However, two solutions may apply in this regard; either the Department of Education must construct proper storage infrastructure in all NSNP schools, or the Department of Agriculture must build storage warehouses, or support farmers in building storage warehouses, to protect the perishability of their produce.

Clearly, the storage issue might inhibit farmers from supplying foodstuffs to schools. At the same time, transportation seems to be a major problem facing smallholder farmers. It is evident that the majority (92 %) of the smallholders have no access to transport that would carry their commodities to markets. The school feeding programme is a good idea because it will reduce transportation costs. It has also been evident that some farmers find it costly to hire transport, and some mentioned that the profit derived from their sale of produce is not sufficient to cater for transportation costs. Even though the schools are located at an average distance of less than 10 kilometres, these farmers still need transportation to carry their produce to schools.

4.7 MARKETING CHANNELS

Different marketing channels are used by smallholders for participating in markets. These include farm-gate marketing, marketing directly to consumers, marketing through a middleman, and direct or contract marketing. Table 4.6 below demonstrates that all the farmers surveyed in the study area used farm-gate marketing (sport markets). About 60 % of the respondents indicated that they sell their produce in the village during pension payouts, which is only once a month. Middleman marketing constitutes 3.8 % of marketing channels used, whereas 7.5 % of the respondents have contract arrangements with larger retailers, such as Massmart. This means that there are very few farmers who have established contract farming with fresh produce markets, supermarkets and agro-processors.

Table 4.6: Different marketing channels used by the farmers in the study area

Marketing channels used	Percentage of respondent (%)
Farm-gate selling	28.7
Middleman	3.8
Contract marketing (Massmart, Spar)	7.5
Village marketing	60

Source: Survey (2013)

Those who were involved in formal, commercialised farming indicated that their contracts have been terminated because of inconsistency and lack of transport. Even though there were no transportation costs involved in farm-gate marketing, farmers indicated that they are price-takers, and they do not have a choice but to accept local prices. They also find it difficult to negotiate prices because of the unavailability of markets for their produce. The drawback of selling produce during pension payouts is that they only sell once in a month, and they also reported that the demand for the produce is unpredictable. Middleman marketing provides a wider market exposure for farmers, but it also causes farmers to rely heavily on middlemen, as the farmers lack negotiation skills in terms of pricing their products.

4.8 AWARENESS AND BENEFITS FROM NSNP

The main question of this study was to establish whether school feeding programmes, especially in rural areas, have become a key market for smallholder farmers. Therefore, this subsection seeks to ascertain whether the smallholder farmers in Jozini have benefited and, if so, how they benefited from the NSNP. In Table 4.7 below, it is evident that only 26.3 % of the respondents were aware of the NSNP, although they do not have adequate information about the implementation of NSNP. From the 26.3 % of respondents who had heard about NSNP, only 3.8 % (three farmers) sold foodstuffs directly to schools, while 96.2 % (77 farmers) of the respondents have not delivered foodstuffs to the NSNP.

Table 4.7: Benefits and awareness of NSNP as a market

	Frequency	Percentage (%)
Are you aware of the NSNP?	21	26.3
Have you delivered food to any school?	3	3.8

Source: Survey (2013)

Discussions with the farmers also showed that most of the farmers were willing to sell their produce to the NSNP, provided that the opportunity arose. However, only a few farmers (3 % of those who benefited from the NSNP) raised concerns about the fixed price of school food, and they reported that they might consider other markets where the price is not fixed. Again, they also raised concern about the possible late payment of their produce since it is a government programme.

4.9 SUMMARY

The level of education plays a key role in NSNP administration duties pertaining to food procurement. The study findings demonstrate that most smallholder farmers had secondary education, followed by those who had primary education. It appears that only a few of them had no formal education, whereas none of them had tertiary education. The majority of the farmers surveyed had access to land through leasing agreements, and others were producing on communal land. Nevertheless, most of the surveyed farmers unfortunately did not meet the lending requirements of financial institutions. In addition, the land is not yet fully utilised because of the lack of access to capital and to a market.

Labour availability still remains a major constraint. However, farmers reported that they do employ causal labourers during the production and harvesting cycle. The farmers also used little of the available improved technology. None of the farmers surveyed had storage facilities. The main cropping pattern used in Jozini is intercropping, followed by crop rotation and monocropping. It is evident that selling to the market is the principal reason for production. However, none of these farmers reported that their main reason is to store and process their produce.

All the farmers surveyed reported that they use farm-gate marketing (traders and supermarkets from Pongolo, Mtubatuba, Richards Bay and Durban) and some of them indicated that they also sold their produce during pension payouts. Only a few of them reported having contract agreements with supermarkets and other agribusiness companies. Generally, farmers in Jozini are forced to sell during the harvest season at low prices because of lack of storage and processing facilities. Only a few farmers in the study area are aware of the NSNP as a market, and only 3.8 % had sold foodstuffs to the NSNP market, although no data exists for the proportion of their total sales justifying this. Local farmers in the study area can only supply part of the necessary ingredients, and according to the caterers, they cannot supply the necessary quantities and their supply is bound to the farmers' season(s). This means that, depending on the soil and the crops that are grown, there are only certain periods in a year that the farmers can sell their harvest.

Clearly, smallholder farmers need to be supported by government for them to be sustainable. The NSNP provides a good platform for these farmers to develop. Perhaps the decentralisation of the NSNP project could potentially open more opportunities for these farmers and the government will then, in turn, be able to provide food security by empowering these farmers.

CHAPTER FIVE

DEVELOPMENT OF THE POTENTIAL PROCUREMENT MODELS FOR FOOD DELIVERY TO THE SCHOOLS

5.1 INTRODUCTION

In the three previous chapters, the main results of the study have been discussed. In this chapter this information will be linked and integrated, sometimes with new results, to show possibilities for improving the market relation between the NSNP and the local farmers. Only 2.8 % of the respondents reported that they had sold produce to schools under the NSNP. As a result of the nature of the current procurement process of the NSNP, the question arises as to how the current system can be changed to facilitate smallholder inclusion in the NSNP supply chain. Therefore, the primary aim of the penultimate chapter is the development of the most suitable smallholder-inclusive model for food delivery to the schools.

This chapter begins with an overview of the Public Finance Management Act (PFMA) used in South Africa, followed by a more specific discussion of the current procurement model. Furthermore, this chapter explains the different potential approaches, or model, that can be used to integrate farmers into NSNP supply chain; it will also highlight the main drawbacks of these approaches.

5.2 PUBLIC FINANCE MANAGEMENT ACT AND THE NSNP

The use of public funds such as NSNP budget is governed by the Public Finance Management Act 1 of 1999 (PFMA) (updated in 2009) in South Africa. The purpose of the PFMA is to regulate financial management in the national and provincial governments; to ensure that all revenue, expenditure, assets and liabilities of those governments are managed efficiently and effectively; to provide for the responsibilities of persons entrusted with financial management in those governments; and to provide for matters connected therewith (PFMA, 1999, Sections 6(1) (g) and 18(1) (c)). Any act of unauthorised expenditure, an

irregular expenditure or a fruitless and wasteful expenditure is regarded as constituting financial misconduct.

Sections 44 and 81 of the PFMA, if read concurrently, refer to all employees of government. Managing finance in the spirit of the PFMA is not limited to financial controls, but also to the commitments that the government makes through budgeting, which have to be honoured. If a Provincial Department of Education budgets for the NSNP and also receives a grant from the National Department of Education, such monies have to be used for the purpose for which they were budgeted.

The PFMA allows the Department of Education Head Office to transfer NSNP funds directly into a school's account and into the service provider's authorised bank account for valid claims and tax invoices received. The conditional grant for the NSNP constitutes public funds, and the efficient and effective use of these funds is dependent on the full application of control measures of the PFMA by all the managers in the public sector.

It is a concern that the NSNP has one commission after another because of the allegations of corruption, which result in the NSNP running out of funds. This state of affairs consequently impacts on the effective and efficient implementation of the NSNP, despite the existence of PFMA control measures in the employment contracts of all public sector managers, including those who are managing the NSNP.

5.3 CENTRALISED MODEL OF PROCUREMENT

The KZN NSNP has shifted from a quotation system to a centralised system. Discussions with key informants, such as school principals, the NSNP clerk at the district office and the current supplier, clearly show that buying foods centrally is more cost-efficient than procuring foods locally, since the aggregate handling costs of all food stocks across the districts outweighs the handling and transport costs of moving staples in bulk. With regard to the centralised system, the school cannot engage directly with farmers in the area since the system only allows for centralised procurement and payment.

However, buying from suppliers seems to reduce NSNP administration and paperwork, as compared to sourcing foodstuffs directly from a single farmer. In Figure 5.1 below, it is evident that the drawback of the centralised system is that it can be more difficult to engage directly with smallholder farmers since there is a missing connection or link between NSNP suppliers and farmers. In addition, this system allows schools to purchase other items, such as seasonings, that farmers are not able to provide.

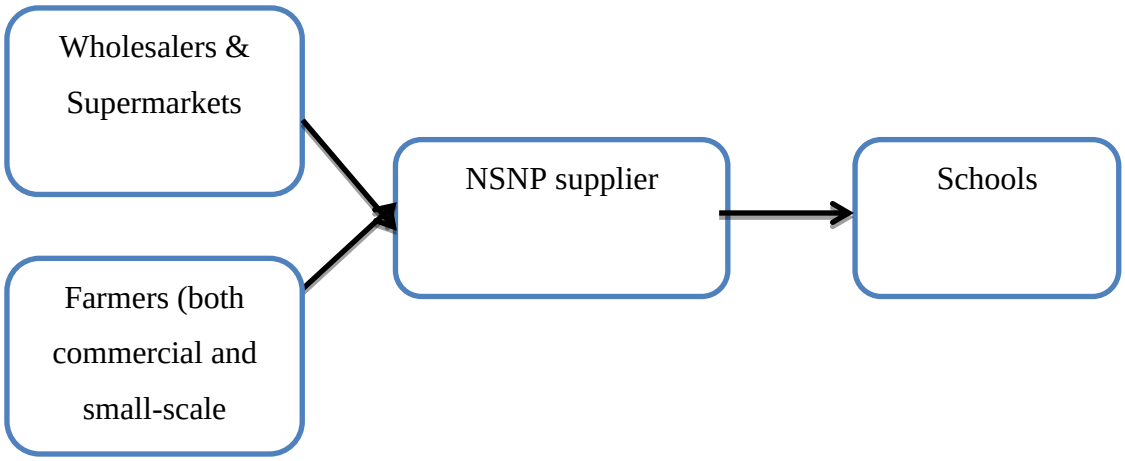

Figure 5.1: The current procurement model in the study area

The contracted NSNP service providers generally buy most of their produce from wholesalers and supermarkets, although some vegetables are bought from the local farmers. The researcher is of the view that the service provider is a "middleman", i.e. he is buying and selling food so that he can make a profit.

The surveyed schools and the suppliers noted that it might be difficult to identify farmers who have the commodities required by the NSNP market. Moreover, the time required to identify, negotiate and coordinate delivery seems to discourage suppliers from sourcing directly from smallholder farmers. The study findings revealed that NSNP involves more paperwork; hence, the suppliers and schools noted that buying directly from single farmers might involve additional paperwork, such as placing more orders and processing more invoices from different farmers.

The majority (90 %) of the surveyed schools and the current suppliers noted that buying from local smallholder farmers would be most feasible if it could be done through the existing

supplier model in order to reduce NSNP paperwork and administration. For this reason, challenges, such as identifying farmers who have products required by NSNP market, contract arrangements, managing different orders and invoices as value adding to the commodities could be avoided through the supplier model. However, the multiplier effects from a supplier model are minimal because the farmer is not directly involved and this results in lower profit margins.

5.4 POTENTIAL PROCUREMENT MODELS/APPROACHES

The study findings in Chapter 4 clearly showed that smallholder farmers in Jozini generally cultivate between 0.5 and 15 hectares of farmland per household, using different cropping patterns. In Table 5.1 below, crops grown include cabbages, amadumbes, butternuts, sugarcanes, beans, maize, rice, sweet potatoes, potatoes and tomatoes. Intercropping of maize, sugarcane and cabbage is the most common cropping technique in Jozini. The above-mentioned crops are also required by the NSNP market; although rice, being a major food item in the NSNP basket, is not grown in the study area. The majority of the farmers surveyed do not carry out value adding to their produce, whereas NSNP demands that foodstuffs should be processed and packaged.

Table 5.1: Matching the crops required by NSNP market and crops grown by the surveyed smallholder farmers in Jozini

Product required by NSNP	Crops grown by farmers in the study area	Seasonality/availability of crops in the study area
Rice	Sugarcane	June to October
Maize meal	Maize	February to June
Samp	Amadumbe	July to November
Cabbage	Cabbage	February to August/September
Spinach	Spinach, Beetroots	February to November
Carrots	Sweet potato, Potato	April to September
Beans	Beans	April to September
Butternut/Pumpkin	Butternut/Pumpkin	May to November
Tomato	Tomato	July to November
Onion	Onion	April to November

According to the discussants and informants, Jozini Municipality has a good production climate for vegetables and fruits, and these can be produced all year-round (April to November) with no out-of-season problems in most crops. The study is not suggesting that farmers in the study area can supply all the fresh vegetables required by schools, but there are some vegetables/crops in the study area that schools use or could use that are already being grown in large quantities (maize, beans, cabbage, calabash and butternut) and can be harvested all year-round. Vegetables, such as tomato, onion and spinach, are not grown by the majority of the farmers owing to climate conditions in the study area. The in-season prices are normally lower than the out-of-season prices, thus the area presents a competitive advantage for the NSNP market.

The main problems with a fresh produce enterprise directed at delivering to fresh produce markets were identified by the farmers in the area and are as follows;

- Potential markets for fresh produce require large volume production
- Transport costs are very high
- The price is not stable and depends highly on supply and demand

• There is no guarantee for a sale unless a market is established in the first instance.

Perishable goods such as vegetables are delivered once or twice in a week, while the non-perishable ones are delivered once or twice in a month, thus increasing the demand for storage because of the joint procurement undertaken. As seen in Chapters 3 and 4, processing and storage facilities are absent or lacking within the district, especially if high, valuable perishables and/or produce requiring processing are required. As argued by Commandeur (2013), inadequate availability, capacity, and management of storage infrastructure all lead to waste and can be a barrier to aligning seasonal local farmer production with year-round demand.

Lack of value adding, such as grading, packaging and processing, as well as the cropping pattern and the timing of plantations, limits smallholder integration in the NSNP supply chain. To propose a mechanism needed to address these obstacles, two approaches might be used to avoid poor integration of farmers in the NSNP market and inhibiting factors, such as storage, namely value adding (grading packaging and processing) and transportation.

5.4.1 Two types of approaches/ options to be adopted as procurement mechanism

Approach number one: Middlemen approach – using the existing supplier model (Involving the Middlemen, but eliminating Supermarkets and Wholesalers).

Description and the setting of middlemen approach

In Figure 5.2 below, the supply chain is seen to be too long, but it reduces the administrative work of NSNP. It also covers factors, such as placing of orders, processing invoices and transportation of produce, which the farmer might not be able to cover. In this approach, schools work directly with the supplier who buys food from the middlemen. This approach allows for centralised procurement, billing and payment. However, it does not facilitate smallholder inclusion in the NSNP supply chain directly.

Figure 5.2: Middleman approach

It is, therefore, difficult to know whether the middlemen are sourcing from local farmers or not. At the same time, suppliers are looking for the least expensive products from the cheapest sources, which are not often smallholder farmers; also, the KZN NSNP service agreement does not oblige them to buy from local producers. Consequently, procuring from these farmers depends on whether the suppliers are willing to make an extra effort to locate them. In order to ensure that the farmers are integrated into the NSNP supply chain, it is crucial to trace the origins of school foodstuffs. The NSNP has to make a requirement that suppliers should source products that are in season from local farmers. Since the KZN NSNP promotes local suppliers, they also need to check the occupation of those shortlisted suppliers, and the suppliers who are involved in agricultural activity must receive first priority. This can also be a requirement during the selection of prospective suppliers.

Approach number two: farmers' group approach – Form farmers' groups (marketing cooperatives) to bid as NSNP suppliers (eliminating middlemen)

Description and setting of farmers' group approach

Figure 5.3: Farmers' group approach

In this approach, the supply chain is convenient as it engages farmers directly through farmers' groups or cooperatives. Moreover, the schools can engage directly with farmers, and the multiplier effects are tangible in this instance. However, buying from individual farmers entails increased administration and paperwork; therefore, the farmers' groups approach helps to address such obstacles. Given the failure of farmers' cooperatives in KZN, the primary aim of the cooperative model should be based on the marketing and transportation of farm products for the NSNP, instead of focusing solely on production.

The farmers' group approach will also help schools to reduce the time wasted on paperwork duties, such as ordering, processing invoices and payments for a single farmer. Since the cooperative will have a chairperson, in this way the ordering of foodstuffs is done through the representative of the farmers' cooperative, and this will ensure that one delivery is made for all members of the cooperative. Given the production capacity of individual farmers in Jozini, farmers' cooperatives can generally offer a wide variety of farm products throughout the year and a more stable or guaranteed supply, as compared to a single farmer.

Institutional and procurement arrangement using farmer's group approach

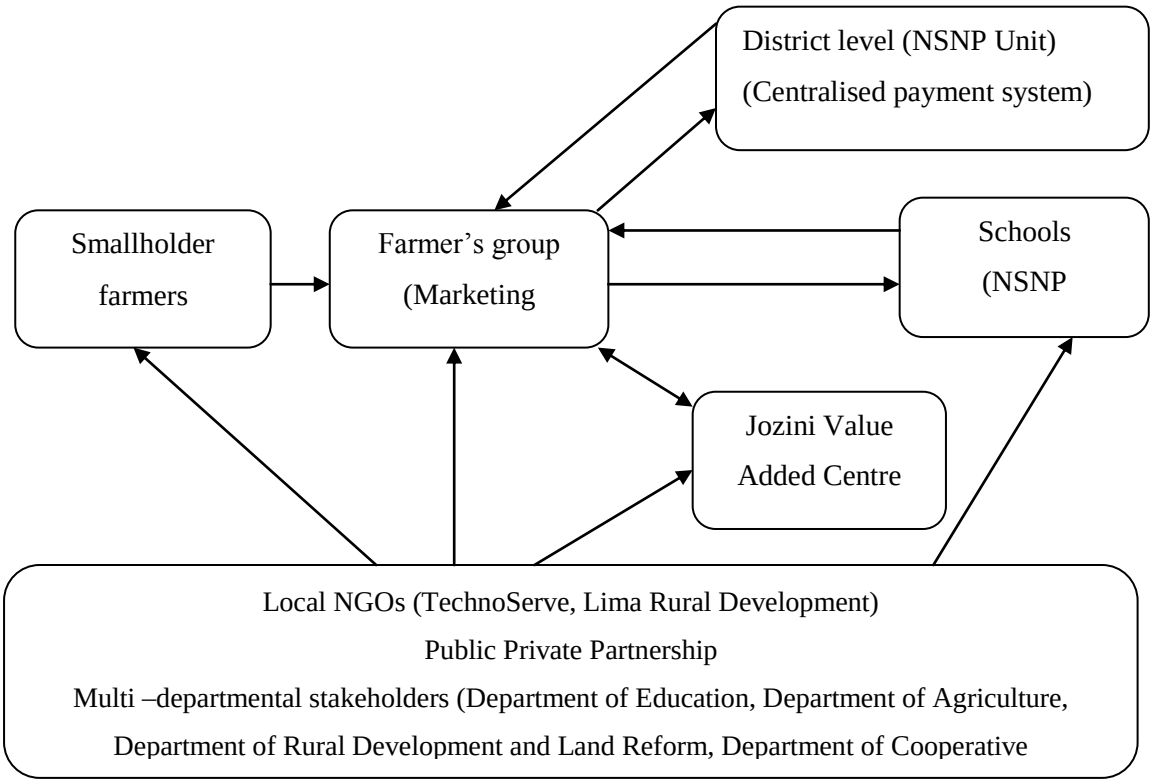

Figure 5.4: Schematic representation of farmer's group supply chain

The model proposes that multi-departmental stakeholders take part in the governance and the implementation of NSNP procurement. The list of stakeholders should include the Department of Education (NSNP institutional home), Department of Agriculture and Rural Development, Department of Cooperative Governance and Traditional Affairs (main funders of the JVAC agro-processing centre). Since the Departments of Agriculture, Rural Development and Cooperative Governance and Traditional Affairs are not officially linked to the programme, an effective change therefore would be to formulate an official contract with the Department of Agriculture, specifying their role and responsibilities in the NSNP programme. The Department of Agriculture could play a role in the forming of these farmer co-operatives. This is based on the information that the farmer groups included in this study were partly built and functioning owing to the efforts of the agricultural extension officer in the area. Literature has shown that direct procurement from individual smallholder farmers is not feasible and is impractical because of the administrative burden of dealing with multiple/unorganised farmers. The marketing cooperatives proposed above will help overcome such barriers by grouping together the small quantities produced by smallholders, reducing transaction costs and raising their bargaining power. The marketing cooperative will provide the various services required by these individual farmers, such as collecting and distributing members' produce to schools, conducting grading and quality control, and providing transportation. The functionality of this model depends on the role of public–private investment in farm infrastructure, such as trucks, warehouse/storage and processing facilities. This farm infrastructure could be centralised to accommodate all the farmers in the area. The Jozini Value Add Centre (JVAC) can be used to facilitate this approach. The JVAC could be used a processing centre.

The proposed model is based on a view that the NSNP can bring market opportunities for local farmers, provided procurement is done at school level by the NSNP School Management Committee (SCM). Procurement at the decentralised level is the best way to ensure that locally-produced foods are bought for the programme; it is also in line with the policy of encouraging and increasing the use of local foods in feeding school children. To avoid mismanagement of funds, the model proposes that the financial management of the NSNP should remain with the district office. In other words, the procurement system should be decentralised, with a centralised payment system (KZN NSNP and the district office),

whereby individual schools are given the authority to determine the procurement method. As a result, the district/schools will have the opportunity to work with the contracted supplier of a farmers' association in procuring locally-grown vegetables and this would allow schools or the district to work closely with local farmers and build relationships. In terms of flow of funds, the schools will fill out a purchasing order and give it to the contracted marketing cooperative, and they will also receive invoices and delivery notes from the supplier. Again, the cooperative will submit invoices with delivery notes to schools, and submit the claim form to the district office for payment. To avoid late payments, the district should release funds to pay the contracted cooperative directly for food cooked and fed to the children during the previous week.

Local NGOs, such as TechnoServe and Lima Rural Development, and Public–Private Partnership can fill in the gaps where government resources fall short. It is important to ensure that NGOs coordinate their efforts, both with other NGOs and with governmental priorities. These NGOs could provide technical assistance in a number of areas. Agricultural development services that introduce techniques to farmers in the areas of increased production and crop yield improvement are also critical to increasing the production of local foods. In addition, local organisations, such as NGOs and donors, are particularly important for assisting in providing inputs, promoting the formation of farmers' cooperatives, and assisting smallholder farmers to access financial services and other extension services. Moreover, NGOs and public–private partnerships can also assist in the building of storage structures.

To maintain a consistent and adequate supply of food to the local schools, community-based farmer associations might serve as the best sources of products to the schools. This would require certain advance agreements between the farmers and the association, but can provide a relatively straightforward way to promote surplus production and procurement at the local level. The local farmer association would contract to sell locally-produced food to a purchasing agent for the school, thus increasing the household stake in the venture. It is likely that the farmers' association could negotiate a better commodity price with local schools, and provide better assurances for meeting delivery terms desired by the school. This would help to offset the usual price disadvantage for individual farmers selling at harvest. Most

importantly, these associations would be able to act on behalf of their members to increase (or decrease) their level of sales when the level of production increases (or decreases) from one year to the next.

In principle, farmers' associations have the advantage of larger structures in terms of organisation and performance. They have the capacity to produce and market larger amounts; therefore, they can compete with conventional suppliers and also with traders. Moreover, since the food comes directly from the local food-supplying farmers (which are partners in the associations), a higher proportion of income benefits resulting from the sale should in principle revert to them. Therefore, this model can provide high benefits for the local farmers in terms of income. As indicated, complementary investments in infrastructure (Jozini Value Added Centre) and technical capacity (from the local NGOs and the Department of Agriculture) are needed in order for producer associations to be effective.

In order to make this approach actually work at the community level, both local farmer associations and community schools will require support from a facilitator (local NGOs – TechnoServe South Africa and Ilima Rural Development) to help create or strengthen local markets. It can be expected that those local schools that are unable to purchase their entire school feeding programme requirements from local sources will require support from a facilitator to purchase, transport, and store the residual food requirements of their programmes which are sourced from surplus areas.

5.5 SUMMARY

By purchasing outside the beneficiary communities, the service provider is providing no direct market for local farmers in Jozini. Even though the supplier model (middlemen) reduces NSNP administrative tasks and issues pertaining to delivery capacity, as well as opportunities for farmers, it cuts out farmers from the NSNP supply chain. In addition, the schools are excluded from decision-making with regard to the purchasing of food and the costs of that food. Both approaches in Figures 5.2 above and 5.3 above can be successful if factors, such as storage, delivery/transport and processing facilities, are fully addressed at a farm level or farmers' cooperative level. This is indispensable, particularly because the

NSNP market requires processed and packaged goods, instead of raw commodities.

Over and above that, labourers are employed by the NSNP to prepare meals, and as a consequence, schools do not have the burden of additional labour for packaging or processing. In the next and final chapter, the discussion deals mainly with the conclusion and recommendations regarding the challenges expressed in the findings.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 SUMMARY

The NSNP food procurement arrangements currently require the contracted service provider to deliver fresh produce and other food items, such as maize meal, rice, samp and ingredients, at three schools on daily or weekly basis. In addition, if the contracted service provider is a farmer, he or she has to buy all the food (all vegetables, ingredients and starch) required by the NSNP. Possibly, this would make it difficult for these farmers to enter the market under the current bidding specification requirements. In order to incorporate more fresh, locally-grown fruits and vegetables into NSNP meals, the contract service agreement and NSNP food basket should be planned with a greater emphasis on the local fresh produce and seasonal availability.

The study ascertained that all the schools surveyed received food items via a trader or middlemen. In this case, all food items came through distributors or middlemen, while nothing came directly from farmers and retail supermarkets because the procurement procedures do not allow these schools to purchase food, as the current procurement model restricts them. This model of procurement is not ideal because the local farmers are not directly involved in NSNP implementation.

At present, contracted service providers often have no system in place to identify and distinguish local products, and most of the purchases are made from local supermarkets and nearby towns, such as Pongola, Empangeni and Richards Bay. There is no system in place to track the quantities, sources and prices of the products entering the NSNP supply chain. If NSNP decides to continue to procure fresh produce through middlemen, it is critical that the contract should require a verification system to identify the products and total quantity of produce purchased locally.

The major challenges for small- to mid-sized farms in selling their produce to NSNP are a lack value addition, limited access to market information, poor succession planting (planning), storage, and distribution. Other than that, all crops required by the NSNP are available in large quantities, except those that require value addition, such as milling of maize, and rice.

6.2 MAIN FINDINGS (conclusion on hypothesis)

6.2.1 Conclusion on hypotheses numbers one and two;

"School feeding programme currently implemented has not resulted in better market opportunities for smallholder and small processors in rural areas of South Africa". "School procurement procedures inhibit local procurement strategies of school feeding programme".

Only three (3.8 %) of the local smallholder farmers have sold foodstuffs directly to NSNP, while 97.2 % have not delivered any produce to the NSNP. It appears that the expected outcomes have not yet been realised because of the current procurement procedures which place emphasis on middlemen or a tendering model, instead of community involvement, hence the aim is to mobilise the surrounding school communities to become involved. Infrastructure, such as storage space for food, is inadequate for the majority of schools. The study concludes that NSNP needs to be supported by proper hygienic storage and warehouse facilities in order to prevent the perishing of products, such vegetables, as well as ensuring that food is available at all times.

At present, there is no quantified evidence of the increased opportunities for small farmers, as well as no exact information on the sources of procured food. In fact, the model of procurement used in the study area has clearly inhibited any improved governance of the financial flows from NSNP at the provincial level to the lowest level (schools). Furthermore, the majority of the schools do not know of the budgeted amount allocated.

The food ration standards developed were not based on local production and there is no linkage between farmers and the school because the NSNP implementation and procurement

modalities are not favourable. Moreover, the centralised procurement system being used has excluded schools from procurement decision making. Instead, service providers are being used for procurement, with no input from the schools and communities about how the funds are utilised. Therefore, the study concludes that there is lack of ownership and management of NSNP at school level, since there is little authority at the school level to determine where food is purchased. Given the low levels of education of smallholder farmers in Jozini, it is abundantly clear that the paperwork that exists regarding NSNP implementation and the procurement modality is too complicated and that farmers need to undergo more training. Collected evidence in the study area demonstrates that the current procurement strategy and procedure limit the possible inclusion of smallholder farmers in the NSNP supply chain.

Generally, however, the NSNP in Jozini has not succeeded in boosting local agricultural production. While most food (vegetables) used in the NSNP is produced within the beneficiary community (Jozini), food is purchased via service providers who happen to be middlemen and there is no mechanism in place to promote sourcing of food from local farmers. In other words, the NSNP in Jozini has failed to make any significant positive impact on agricultural production in the beneficiary communities because of the food procurement strategy being used. Therefore, the school feeding programmes currently being implemented in the study area have not resulted in better market opportunities for smallholder farmers in this rural area of South Africa and the school procurement procedures of bidding and tendering inhibit local procurement strategies for the school feeding programme.

6.2.2 Conclusion on hypothesis number three:

"Smallholder farmers are able to supply all the schools in the study area"

In the study area, food items, such as maize, rice, cabbage, spinach, butternut, pumpkin, onion, tomatoes, beans and spinach, were the only food products approved for school feeding. Local smallholder farmers who produce crops other than these items may not be able to sell their produce to school feeding programmes, unless the NSNP menu is planned with greater emphasis on locally-grown crops. Even though amadumbe, chilli, calabash and

other crops are locally advantageous and grown by most farmers, farmers may not be able to sell such foodstuff to NSNP market.

At present, about 96 % of the vegetables stipulated in the food ratio composition can be sourced locally, namely cabbage, butternut and beans. It is evident that some of the vegetables, such as carrots and spinach, demanded by NSNP are not widely grown in the area; however, an extension officer mentioned that these vegetables grow very well in Jozini. Therefore, there is a need for crop diversification in order to meet the stable demands of NSNP.

However, most of the agricultural products which are produced in Jozini by smallholder farmers have no value addition, whereas the NSNP market requires packaged and processed food. Moreover, most of the surveyed farmers do not have the capacity to process any of their products. In addition, the farmers indicated that they are willing to add value to their produce with support from government and the private sector in terms of infrastructural development, such as agro-processing facilities.

Discussions with the farmers show that they use very little of the available improved technology. Most of the farmers in Jozini are operating individually and the NSNP demand requires different food items throughout the year. As a result, individual farmers will not be able to supply the schools because of the wide variety of produce in the NSNP basket. At present, the surveyed farmers can supply all the schools in Jozini, provided there are institutional arrangements in place to cater for issues such as crop diversification, technology, improved seeds, storage facilities and value addition. The formation of a Farmers' Association, with special emphasis on marketing, should be considered for NSNP implementation, since there appears to be no link between individual farmers and the NSNP. Therefore, the study concludes that the farmers have the ability to produce for the schools. However, in order to for them to fully utilise the NSNP market, it is evident that they need to be involved in value adding, such as processing and packaging, in order to meet NSNP requirements.

6.2.3 Conclusion on the potential procurement model:

"The framework that would link market access of farm produce by local smallholder farmers to the school feeding programme".

By purchasing from outside the beneficiary communities, the service provider is providing no direct market for local farmers in Jozini. Even though the supplier model (middlemen) reduces NSNP administrative tasks and issues pertaining to delivery capacity, opportunities for farmers, it however cuts farmers out from the NSNP supply chain. Moreover, the schools are prevented from participating in decision making with regard to what food is purchased and the cost of that food. Both approaches in Figures 5.2 above and 5.3 above could be successful, if factors such as storage, delivery/transport and processing facilities are fully addressed at a farm level or farmers' cooperative level. This is important particularly because the NSNP market requires processed and packaged goods instead of raw commodities. Furthermore, the task of the labour employed by NSNP is to prepare meals and the schools do not have additional labour for washing or processing operations.

6.3 RECOMMENDATIONS

Following from the conclusions, the following recommendations are proposed for consideration:

6.3.1 Decentralising procurement and centralised payment

Excluding schools from food procurement decisions has resulted in lower participation by local farmers in the NSNP market. Therefore, the study recommends the introduction of a decentralised procurement system whereby individual schools are given the authority to determine the procurement method. As a result, the district/schools will have the opportunity to work with the contracted supplier of a farmers' association in procuring locally-grown vegetables and this would allow schools and the district to work closely with local farmers and build relationships. To avoid corruption and mismanagement of funds, the KZN NSNP can continue with using the centralised payment system. One should note that it

is vital to build the capacities of schools/districts to carry out food procurement from smallholder farmers' cooperatives.

6.3.2 Choose the most suitable potential model for smallholder inclusion in NSNP supply chain

Two approaches/models of procurement were discussed in Chapter Five, namely middlemen and farmers' cooperative approaches. With careful consideration, the study recommends the substitution of middlemen in the NSNP supply chain with farmers' cooperatives. However, the functionality of this model depends on the role of public–private investment in farm infrastructure, such as trucks, warehouse/storage and processing facilities. This farm infrastructure could be centralised to accommodate all the farmers in the area. The Jozini Value Add Centre (JVAC) could be used to facilitate this approach. The middlemen approach could be used in case there is lack of public–private intervention. However, the Department of Education must include a clause in the service agreement contract which promotes the sourcing of NSNP food (vegetables) from local farmers in the beneficiary community. The Department of Education must request a list of producers used by the middlemen and verify that they purchase the required food or vegetables from local farmers.

6.3.3 Modification of school feeding basket based on local production

The study findings revealed that vegetables, such as butternut, are wasted in most of the rural schools surveyed. Therefore, there is a need for a new menu to be developed by a nutritionist, recommending more local foods with a diversified food basket, based on local agricultural production and seasonality. Moreover, the menu should be planned with greater emphasis on locally-grown vegetables. During the modification of the school feeding menu, it is important to include local producers and schools in the decision-making process on the types of foods needed for NSNP.

6.3.4 Public-private Investment in infrastructure (storage food space and processing facilities)

The findings show that the requirement for proper storage facilities and delivery capacity (transport) of foods for use in NSNP impede smallholder farmers' inclusion in NSNP supply chain. It is crucial for the farmers and the private and public sectors to develop and initiate value adding practices among the smallholder and emerging farmers. Practices that do not need much capital, like packaging, cutting and drying, can be considered by the farmers without outside help. The private and public sector can assist with educating the farmers about value adding and providing financial assistance for the practices that require larger capital commitments, such as processing. A public–private investment model could be used to leverage private investment that supports farmers' inclusion in NSNP supply chain, and also provides storage infrastructure to enhance local agriculture. The private investment would entail the construction of storage rooms or warehouses, and the purchase of coolers and refrigerated trucks. Two approaches can be used to support this initiative of private investment, namely:

Approach number one: The storage infrastructure (food hub or warehouse) can be built at the school or at the community. The advantage is that, currently in Jozini, the government has built a processing unit called the Jozini Value Add Centre (JVAC). The Jozini Value Added Centre was built in December 2011 with funding from the Department of Co-operative Governance and Traditional Affairs and the Municipal LEDA (Local Economic Development Agency). However, the JVAC is not currently functioning and infrastructural development, such as refrigerators and coolers, are greatly needed to ensure the smooth operation of the JVAC. Moreover, the JVAC needs a stronger stakeholder involvement from the government sector, as well as the private sector.

Approach number two: The public–private relationships can also play a vital role in addressing the transportation problem in Jozini. This problem can be solved by buying a truck to collect produce from the farmers and deliver it to the warehouse (JVAC). This truck could serve the entire farmers' association in the area. The most important intervention should be the promotion of value adding of agricultural products in Jozini.

6.3.5 Developing standards for school gardens and incorporating farm-to-NSNP in the current curricular

Providing opportunities for school gardens and mechanisms to recover costs will provide important educational opportunities. Discussions need to be held on developing standards for school gardens, and support for development of curricular materials at appropriate grade levels that would incorporate farm–to–NSNP market as part of the curriculum. Furthermore, the gardener should record the yield coming from the school garden.

6.3.6 Capitalise on the stable and guaranteed demand offered by NSNP market

From the findings as observed in schools, rice and maize meal are consumed throughout the week as the primary staple, with vegetables accompanying all meals served each day. Consequently, small farmers are in a good position to capitalise on the larger market provided by NSNP by expanding their production capacity. This, however, will likely require farmers to regard agricultural production as a business and not as a way of life.

6.3.7 Establishment of farmer's cooperatives with special emphasis on distribution and marketing

The study findings show that it might be difficult for an individual smallholder farmer to meet the demand required by the NSNP market owing to a lack of processing and transport facilities. In addition, the production of an individual farmer is typically inadequate to supply a school. Therefore, the study recommends that farmers need to organise themselves into a cooperative to meet the volume and distribution requirements of NSNP. At the same time, the farmers would position themselves more effectively in the NSNP supply. As a result, this association would address issues such as the inadequate and inconsistent supply of food to the schools. A cooperative would also enable these farmers to obtain financial assistance to capacitate their production.

6.3.8 Organising food items into multiple contracts

Dividing food items bid for into multiple contracts would allow for the inclusion of smallholder farmers in the bidding process and could potentially allow local farmers to sell their produce to the NSNP. This multiple contract approach could be divided into two contracts, namely (1) dry supplier and (2) fruit and vegetable supplier. This would allow for a more competitive bidding process and also increase farmers' involvement in NSNP market. However, this approach might be more practical under a decentralised procurement system, for instance as in North West province, Eastern Cape, Northern Cape and Free State, where funds are transferred to schools.

In conclusion, this study has unveiled the fact that the government can play a key role in the development of the local economy by empowering smallholder farmers. The NSNP project is strategically positioned to address these needs. The study has also shown the importance of establishing cooperatives instead of relying on individual farmers who will not be able to supply the local market. More creativity is needed for projects, such as the NSNP, to impact on the lives of beneficiary communities. Structural hindrances should be removed to facilitate more economic activity in previously disadvantaged communities. This could potentially reduce the scourge of unemployment in our communities and also enhance the nutrition and quality of education in schools in South Africa.

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