

CHAPTER 7

SUPERMARKETS' IMPACT ON AGRICULTURE, MANUFACTURING/ FOOD PROCESSING AND TRADE IN THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY

7.1 Introduction

The impact of South African supermarkets on the host nations' agriculture and food-manufacturing/processing industry is complex in that in some cases it is direct and observable while in others it is indirect and may occur at the macro-economic level. Supermarkets impact directly on consumers, other businesses and local producers. These impacts are as a result of the decisions made by the supermarket to source or procure from suppliers in the host nation where they have invested or source and procure from South Africa or from other countries as discussed in Chapter 3. These impacts may be positive or negative depending on whether local farmers and processors access and sell their products to these multinational supermarkets or not. These impacts may also differ in different sectors depending on the structure of the agrofood systems and regulatory policies in individual countries. The impact on individual small-scale farmers has been estimated in Chapter 6. In this chapter, an attempt is made to determine the impact of supermarkets on agriculture and industrial development by using case studies in the dairy sector and fresh fruit and vegetables (FFV) sector. Impacts in these sectors were analysed by means of a deductive analysis (first a premise, examine the facts and draw conclusions) to determine the general impact on the development of agriculture and industry in the SADC. Due to the limited size of the sample this chapter will only present preliminary results which may generate more hypotheses for future research.

This chapter is organised as follows: Section 7.2 gives a description of the processing firms interviewed in the case-study countries. In section 7.3, the impacts of supermarkets' involvement in the dairy sector are discussed. In section 7.4, the impact of supermarkets on the FFV sector is discussed. The impacts were determined by

interviewing key informants, a survey of farmers who supply FFV to supermarkets and alternative local markets and dairy processors. Triangulation was done by making use of secondary data. In section 7.5 a comparison of perceived impacts in the FFV sector in case-study countries is given. In section 7.6 a description of trade flows in SADC is given and section 7.7 gives the summary of the chapter.

7.2 Impact of supermarkets on the food-processing sector

The impact of supermarkets on the food-processing sector was deduced by carrying out a survey of food processors in the case-study countries for the selected products. The survey was intended to establish profiles of processors' to determine whether small-scale food processors were able to access the supermarket channel in the case-study countries and, if not, to determine whether there were other channels in use by these processors, and to establish the constraints faced by small-scale processors in attempting to sell products to chain supermarkets. A total of 18 firms (excluding those in FFV such as Freshmark and Freshco) involved in food processing (dairy, milling, fresh fruit and vegetables processing, bread making and confectionaries) across the three countries were sampled (sampling and data collection is discussed in section 1.8.2) and analysed to determine the marketing channels of these firms (whether firms supply to supermarkets or not) and the constraints facing them. Table 7.1 shows the profile of firms and products that are processed in the case-study countries.

Table 7.1: Profile of food-processing companies interviewed in Botswana, Namibia and Zambia

Company name	Country/city/town	Year started operations	Products	Capacity/scale	Number of employees	Market channels	Total annual sales 2-5 years ago	Total annual sales today (time of interview 2005)	Constraints/strengths that hinder or enable them to supply to SA supermarkets located in host countries
Dairying Parmalat (Zambia Ltd)	Zambia Lusaka, Kitwe	1996	A B C D H J	120000 l/day (50 000) Large-scale	N/A	20% Shoprite 80% other channels (wholesale, small shops &, independent supermarkets)	N/A	N/A	Have distribution points across the country. Distributes to all Shoprite stores
Dairy King	Lusaka	2001	A B F G	2500 L/day (1000) Small-scale	12	(Small shops, local small supermarkets)	N/A	N/A	Lack of transport Long credit period (Shoprite 30 days) Low capacity
Manyana farms	Chipata	2002	A G K	270 L/day Medium-scale farm	89	Indian shops, own factory outlet and Eastern Dairies	7 million (kwacha)	40 million (kwacha)	Not able to attain high quality demanded by Shoprite. Lack of transport Long credit period (Shoprite 30 days)
Eastern Dairies	Chipata	1996	A B D L	25000L/day Medium-scale	20	Wholesalers Small shops Own factory outlet	120 million (kwacha)	180 million (kwacha)	Lack of transport Long credit period (Shoprite 60 days)
Parmalat (BW Ltd)	Botswana Gaborone	1988	M	Large-scale	35	Wholesale 65% Supermarkets	28 million pula	57 million pula	Distributes to all chain supermarket stores

Sally Dairy	Gaborone	1994	A F H	10000 L/day Medium-scale	18	Wholesalers and other 75% Supermarkets 25%	N/A	N/A	Distributes to all chain supermarket stores
Clover (BW Ltd)	Gaborone	1994	A B F H	40000 L/day Large-scale	N/A	Wholesalers and other 60% Supermarkets 35%	N/A	N/A	Distributes to all chain supermarket stores
Milling									
N.M.C Ltd	Lusaka	N/A	Maize flour, livestock feeds, rice	Large-scale	686	Supermarkets 40% Wholesalers 60%	N/A	N/A	Has logistic capacity and distributes to all Shoprite stores in Zambia
SABCO (Superior) Millers	Lusaka	2000	Maize meal	Medium-scale	30	Wholesalers Small shops	0.5 million (kwacha)	1 million (kwacha)	Lacks transport to supply to all Shoprite stores Long credit period
Kwacha Milling Ltd	Chipata	1999	Maize meal	Medium- scale	38	Wholesalers Local shops Own factory outlet	N/A	N/A	No need. Developed own networks. Long credit period (90 days)
Nyati Milling	Lusaka	1995	Wheat flour	Medium- scale	15	Bakeries Local shops Wholesale	N/A	N/A	No need. Developed own networks. Long credit period (90 days)
Namib Mills	Windhoek	1982	Maize flour Wheat flour Pasta Animal feeds	Large-scale	N/A	Supermarkets 60% Wholesale 30% Small shops 10%	N/A	N/A	Distributes to all chain supermarket stores

Bakery/confectionery									
Jambo Bakery	Chipata	2001	Bread Buns	Medium- Scale	70	Local shops Own outlet	N/A	N/A	Shoprite did not want to buy from them.
Sayah Bakery	Lusaka	2002	Bread Buns	Small-scale	< 10	Local shops Own factory outlet	N/A	N/A	Shoprite does not affect them in any way
Amigo Foods	Lusaka	2001	Potato chips, Cheese curls	Medium- Scale	30	Supermarkets 70% Local shops 30%	2.7 billion (kwacha)	2. 9 Billion (Kwacha)	Distributes to all Shoprite supermarket stores
Capricorn Sweets	Windhoek	1988	Sweets, confectioneries, peanuts	Medium- scale	38	Supermarkets 30% Kiosks Wholesalers	N/A	N/A	Deliver to all Shoprite stores

Key

A = Pasteurised milk

B = Yoghurt

C = Long-life (UHT) milk

D = Butter

E = Cheese

F = Cultured milk

G = Flavoured milk

H = Juices

J = 'Magheu'

K = Raw milk

L = Ice creams

M = distributes products imported from parent company in South Africa

N/A - information not available

In each sub-sector, large, medium and small-scale firms were interviewed. The reason was that by sampling and interviewing all firms it could be possible to establish why some firms accessed the supermarket channel while others did not and also to determine the impact of supermarkets' growth on various firms.

Seventy-five percent of the processing firms interviewed began their operations during the 1990s. This could be due to liberalisation of the economy undertaken by these countries in the early 1990s as already discussed in section 2.9.2. South African companies, including supermarkets, took this opportunity to expand into Africa. This period marked a rapid growth and expansion of supermarkets in the SADC resulting in increased market opportunity for farmers and processors who could access these new markets. Because most of the sampled firms were established after 1994 it is not possible to deduce whether the companies increased in size by supplying to supermarkets. Probably a symbiotic relationship exists between large processing firms and supermarkets. The firms provide the products and supermarkets provide a market for these firms. Both benefit from their relationship. Evidence of upgrading products and increasing size to serve chain supermarkets cannot be established by this study; therefore more research is necessary in the future.

The marketing channels used by food processors in the case-study countries fall into two major categories. The "traditional channels" (wholesale markets, small local independent supermarkets, small shops, agents, kiosks and own factory outlets); and the "modern channels" (this includes chain supermarkets). Large-scale processors used the two channels (supermarkets and traditional). The share of the large processors' output sold through supermarkets varied from country to country depending on the nature of the supply chain (Table 7.2). The large milling companies sell approximately 40% of their output directly to chain supermarkets in Zambia and Botswana and approximately 60% directly through chain supermarkets in Namibia. In the dairy processing sub-sector, approximately 40% of the processors' output is sold through supermarkets and 60% through the traditional channels (wholesale, small local supermarkets and small shops) in Zambia, and approximately 35% of dairy processors' output is sold through supermarkets

in Botswana and approximately 65% is sold through the traditional channels (Table 7.2). Supermarkets baked bread in their in-store bakeries in the three countries, resulting in most companies (large and small) being unable to access the chain South African supermarkets supply chains for bread. In Zambia, no bakery was supplying Shoprite with bread because Shoprite has its own bakery. Nevertheless other bakeries had developed their own supply chains by selling through the traditional marketing channels. In Namibia and Botswana large baking companies are able to access and supply to supermarkets. This implies that local baking companies are in direct competition with supermarkets. The supermarkets sell their bread at lower price than the competitors.

Large-scale processing firms negotiated formal contracts with supermarkets because these firms are able to satisfy the conditions of the chain supermarkets in terms of quantity, quality (grades and standards) and logistics capability. The prices the large-scale processors receive are inclusive of transport costs. Large processors' participation in the supermarkets supply chain has resulted in increased output and annual sales as reported by the managers that were interviewed.

Table 7.2: Share of sampled processors output (%) sold through supermarkets and traditional channels

Food processing sub-sector	Country/Share* of output sold through various channels by large firms					
	Botswana		Namibia		Zambia	
	supermarket	traditional	supermarket	traditional	supermarket	traditional
Milling	40	60	60	40	40	60
Dairy	35	65	60	40	40	60
Bread/confectionery	20	80	20	80	0	100

Source: Survey results, 2004-2005; * these are estimates by interviewed managers of processing companies in response to questions put to them from the structured questionnaire.

Small-scale and most medium-scale processing firms in the dairy, milling and bread and confectionery industries were not able to access the supply chains of the chain supermarkets. Small-scale processors who do not produce sufficient products in terms of

quantities and quality and lack logistics capacity, do not access the South African chain supermarkets in host countries. These firms use the alternative traditional market channel to market their products. None of the processors interviewed quoted lack of market access as one of their constraints. Most of the firms interviewed (large, medium and small) have shown an increase in their total annual sales for those firms who were willing to divulge such information. Most firms interviewed declined to give this information citing confidentiality.

Responding to the question: “Why don’t you supply to supermarkets?” the small-scale processing firms cited various constraints that make them unable to supply to supermarkets. These included lack of logistics capacity. For example, for a small-scale milling or dairy-processing firm to be able to supply to the chain supermarkets they must be able to supply to all the stores in the country. These stores may be located in distant localities requiring efficient transport systems. Another constraint cited was long credit period (ranging between 30-90 days). Most small-scale processors are cash-strapped and cannot wait that long. Most of these firms prefer to supply to the traditional channels where they receive payment on delivery or where the credit period is at most seven days. The small-scale and medium-scale processing firms have established their own customer base and their market segments. Small-scale and medium-scale processing firms produce products and sell to marketing channels that target low-income groups whereas large processing firms target chain supermarkets that cater for the middle- to high-income consumer groups.

7.3 Impact of supermarkets’ involvement in the dairy sector in Botswana, Namibia and Zambia

The information below on how South African and local supermarkets have impacted on the dairy sector was collected from a survey of dairy processors, interviews of key informants, and secondary data.

7.3.1 Increase in fresh milk output

According to key informants, the investment by chain supermarkets such as Shoprite in Zambia has extended the cold chain for fresh milk. This has enabled increased fresh milk availability in urban towns in areas remote from Lusaka. Apart from supermarkets availing cold storage for processed fresh milk in their stores, increased involvement of milk processors in the supply chain, especially manufacturing long-life milk, has made it possible for consumers to access milk for domestic use. Large dairy-processing companies deliver fresh pasteurised milk to chain supermarket stores in Lusaka and all major provincial towns. Government policy requiring that fresh milk and other dairy products available locally be procured locally to promote production in Zambia facilitated this. Ready availability of milk in supermarket stores has resulted in increased per capita milk consumption, especially in urban areas such as Lusaka.

The inclusion of large local dairy processors in the supermarkets' dairy supply chain implies that emerging dairy farmers (small-scale dairy farmers) and large-scale commercial dairy farmers access supermarkets. Dairy processors such as Parmalat and Finta in collaboration with other dairy improvement projects have made special arrangements to assist small-scale dairy farmers by purchasing milk from organised groups of farmers at collection centres. Data supplied by Land O' Lakes show that milk collection from organized farmer groups has been increasing. The quantity of milk supplied to dairy processors through collection centres increased from 830 263 litres in 2002 to 1 288 964 litres in 2004. At the same time the number of small-scale dairy farmers delivering milk to dairy processors through collection centres increased from 222 in 2002 to 557 in 2004 (Land O' Lakes, 2004). In general through the developing supply chain, there has been an increase in the amount of milk produced in the country (Table 7.3).

There has also been an increase in the quantity of milk processed and marketed by these dairy firms. For example, Parmalat Zambia sold 20 million litres in 2002 and this increased to 24 million litres in 2003 (Valeta, 2004). Survey results show that Eastern Dairies increased its annual sales from K120 million in 2002, to K180 million in 2005.

Table 7.3: Milk production and consumption statistics in Zambia (1998 – 2003)

Year	Volume produced (litres)	Estimated milk consumption (litres)	Deficit/Surplus (litres)
1998	138,000,000	169,000,000	-31,700,000
1999	141,000,000	174,000,000	-33,000,000
2000	135,000,000	166,900,000	-31,900,000
2001	139,000,000	171,000,000	-32,000,000
2002	147,000,000	181,800,000	-34,800,000
2003	190,000,000	235,000,000	-45,000,000

Source: Valeta (2004)

Manyana farm increased its annual sales from K7 million in 2002 to K40 million in 2005 (Table 7.1). Data on output was difficult to obtain as most firms indicated that the information was private and confidential; nevertheless many processing firms interviewed reported increased production and annual sales. The increase in milk production and processing in the firms that were surveyed cannot conclusively be attributed to supermarkets involvement in the dairy supply chain alone in Zambia, but one can confidently conclude that the involvement of supermarkets in the dairy supply chain has not resulted in reduction in milk production in Zambia.

There are three main dairy processors in Botswana who process raw fresh milk into pasteurised fresh milk and other dairy products such as yoghurts and milk drink juices. These are Clover Botswana Ltd, Sally Dairy Ltd and Parmalat Botswana Ltd (Table 7.1). A fourth dairy processor, Dairy King located in Lobatse, started operations in 2003. It is fairly small compared to the others. Currently only Clover, Sally Dairy and Dairy King process fresh milk. According to the managing director, Parmalat Botswana does not process fresh milk because of high costs. Parmalat Botswana acts as an agent of the parent company, which has four processing plants in South Africa. Parmalat Botswana receives processed milk products (UHT milk, cheese and yoghurt) imported from Parmalat factories in South Africa for distribution in the Botswana market. These four dairy processors supply dairy products to all supermarkets (international and national) such as Spar, Pick 'n Pay, Shoprite/Checkers, Payless and Choppies. Apart from these two major dairy processors, there are other smaller dairies on farms that pasteurise milk. These do not access supermarkets but sell their milk directly to consumers and other institutions such as schools.

Just as in Zambia, the involvement of dairy processors and supermarkets in the dairy supply chain has resulted in increased fresh milk output. According to the dairy processors interviewed in Botswana who process fresh milk (Clover Botswana and Sally Dairy), there has been a tremendous increase in the quantity of milk they process and sell since the coming of the chain supermarkets. The processors have also increased the number of workers in their factories. For example, when Sally Dairy started in 1994, there were nine workers but since the coming of the multiple chain supermarkets, the number of workers increased to 18. The company bought new equipment to increase capacity, therefore more workers were hired.

There is one main dairy processor in Namibia, namely Namibia Dairies, which was formed in 1997 through the merger of Bonmilk and Rietfontein Dairies. Namibia Dairies have processing plants in Windhoek and Rietfontein in the north. Dairy production is mainly carried out on large-scale farms. Dairy production is still in its infancy in Namibia and therefore still protected under the Infant Industries Protection Act. Under this Act importation of fresh milk was banned even though domestic milk production is insufficient to meet domestic demand and in excess of 25 000 milk equivalents are imported annually (Republic of Namibia, 2002). Supermarkets do import other processed milk products such as long-life milk, cheese and yoghurt.

7.3.2 Improvement in milk quality

The quality of milk sold to consumers has improved with the arrival of the large South African supermarket chains because supermarkets procure from local large dairy-processing companies such as Parmalat, Finta and large farms. These dairy companies maintain high standards, which at the same time satisfy supermarket private grades and standards requirements. To attain high quality processed milk products, processors need good quality fresh milk from milk suppliers. This means that quality has to be maintained from the farm level to the processing plants. To improve milk quality at farm level making sure processors access better grades of milk for processing has required collaboration of all stakeholders to educate dairy farmers, especially small-scale

emerging dairy farmers, in better, improved and safe production methods. Collaboration between dairy processors, the Zambian government and other stakeholders such as Land O' lakes and Zambia Agribusiness Training Assistance Centre, has facilitated the inclusion of small-scale dairy farmers in the dairy supply chain of processors and hence supermarkets. This has been achieved by training farmers on issues of quality, formation of dairy farmer groups and provision of inputs that farmers need to assist them to produce more milk and supply to dairy processors. For farmers to meet the quality and quantity requirements and reduce transaction costs, the government and non-governmental organizations have promoted the formation of dairy farmer co-operatives.

In Botswana, the quality of milk has also improved probably because supermarkets demand high quality milk. The processors are responsible for delivering the required high quality milk to supermarket stores. Before a processor can access the supermarkets' supply chain the processor is audited (for example Pick 'n Pay visits the processing company and carries out an audit of its processes to determine whether they meet the set standards). In response to the demands of supermarkets, dairy-processing firms ensure that the milk supplied to consumers in these stores is of high quality and meet national and international standards. To achieve high quality milk standards dairy processors in turn set and enforce standards based on somatic cell counts and other tests such as acid test, freezing point test and HACCP. When the farmer delivers milk, a sample is taken and tests carried out to determine its suitability for processing. Dairy farmers in Botswana are paid according to the grade of milk supplied as shown in Table 7.4

Table 7.4: Milk grades and producer pricing in Botswana

Milk grade	Somatic cell count (SCC)	Producer price (pula)	
		2003	2004
A	$\leq 200,000$	1.82	2.10
B	$201,000 \leq 300,000$	1.65	1.82
C	$301,000 \leq 400,000$	1.30	1.65
D	$\geq 500,000$	1	1.30

Source: BCA farm* (2005)

* BCA farm supplies fresh milk to clover Botswana. These are the standards that all farmers have to meet to supply to clover Botswana Ltd.

Grade A is preferred for processing. Most small-scale farmers in Botswana achieve grades B and C. These grades are normally accepted but are used to make fermented products such as yoghurt and sour milk. This could be because hygiene and facilities required for high quality milk production are lacking on these farms according to the processors interviewed. The processors maintain the standards of milk by rejecting milk that does not meet the set standards. The high standard of fresh milk demanded by supermarkets puts pressure on small producers to improve quality.

In Namibia just like in Botswana and Zambia, quality of milk available to consumers may have improved as supermarkets source fresh milk from the two large local dairy processors.

7.3.3 Increased dairy product exports and imports

Zambia is deficient in milk production (Table 7.3). Processed dairy products such as powder milk, condensed milk and cheese among others are imported from South Africa, the SADC and other parts of the world. There has been increased importation of dairy products to meet domestic demand for domestic consumption and reprocessing by dairy firms (Table 7.5). Dairy product imports into Zambia have grown by 77% between 1998 and 2003.

Table 7.5: Imports and exports of dairy products in Zambia from 1998 to 2003

Year	1998	1999	2000	2001	2002	2003
Total imports Value (\$US)	3,362,001	4,147,024	4,237,172	5,602,062	5,434,403	5,956,409
Total export Value (\$US)	88,743	89,490	2,315,452*	201,463	211,492	610,194

Source: Valeta (2004) *re-export of imported milk products to Malawi

Some companies such as Finta import milk powder from South Africa to process into other products, such as long-life (UHT) milk, which are sold on the local market and also exported to neighbouring countries such as Malawi and the Democratic Republic of Congo. Owing to these reprocessing activities, there has been an increase in the amount of UHT milk exports to neighbouring countries such as Malawi and the DRC. In general, there has been an increase of milk exports from Zambia (Table 7.5).

The opening up of export markets should also contribute to increased milk production in Zambia. Finta uses both fresh and powder milk. As more fresh milk becomes available in Zambia there will be less reliance on imported milk powders. Owing to the increasing availability of markets for milk, dairy farmers have increased milk production on their farms. Milk production is bound to continue increasing in order to meet expanded demand in the future. Therefore, processors and supermarkets have generally had a positive impact on the dairy sector in Zambia.

In Botswana, the impact of supermarkets on the livelihood of small-scale dairy producers is still small. This is because most of the fresh milk processed in the country is sourced from South Africa. The reason for this sourcing pattern is the under-development of the dairy sector in general. Dairy farming is still in its infancy in Botswana (Republic of Botswana, 2004b). At present, Botswana is deficient in fresh milk production. According to the Ministry of Agriculture, 44% of the fresh milk consumed in the country is produced in Botswana; the rest is imported from South Africa. Statistics provided by the two major dairy processors showed that 86% of milk processed by these companies in 2003 was imported from South Africa (Table 7.6).

Table 7.6: Local production and fresh milk imports (from SA) in Botswana (2003)

Processing company	Imported fresh milk (litres)	Local production (litres)
Clover Botswana	4 465 741	1 087 729
Sally Dairy	2 708 273	59 596
Total	7 174 014	1 147 325
% of total	86	14

Source: Ministry of Agriculture: Dairy section annual report 2003/2004

The government is encouraging dairy production in the country to substitute for fresh milk imports. This has been achieved by formulating policies that encourage dairy processing firms to source from local producers. The policy guiding the sourcing and procurement of dairy products was formulated and gazetted in the year 2000 and is still in force to date. Importation of fresh milk is regulated via licensing which the Ministry of

Agriculture controls. The two major companies that process fresh milk (Clover and Sally Dairy) have to obtain import licences from the Ministry of Agriculture. Each company is given a certain quota (number of tonnes to import), which is reviewed quarterly. The quantity of milk each company imports is pegged to the amount of milk produced by local producers in the review period.

A law that requires dairy farmers to pasteurise milk before selling to consumers hinders small-scale dairy farmers who cannot afford to purchase pasteurising equipment. This requirement makes it difficult for small-scale emerging dairy farmers to exploit this channel (selling directly to consumers). Despite this legislation some dairy farmers interviewed reported selling raw fresh milk to their neighbours at a price of P3.50 per litre which is much higher compared to P2.10 per litre for grade A fresh milk sold to dairy processors. This is because some consumers prefer raw fresh milk over processed milk. Obviously, this trade is illegal. This finding is similar to the results from Zambia which show that small-scale farmers selling milk directly to consumers obtained higher returns (Emongor *et al.*, 2004). Small-scale dairy farmers in Zambia preferred to use both channels. The dairy processor was useful in periods of excess production when direct sale to consumers could not absorb all the milk produced. But during the period of low production farmers who had contracts to supply to the dairy processors had to meet their obligation before disposing the rest directly to consumers (Emongor *et al.*, 2004). Therefore, in the case of Botswana, direct selling of milk to consumers by emerging dairy farmers could be allowed to encourage more production.

In Namibia, the trends in the quantity of animal products and vegetables imported from South Africa to satisfy domestic demand varies (Table 7.7). This could probably be explained by the reigning policies of banning importation of fresh milk and quotas imposed on supermarkets to source locally which may be diverting trade as already explained in section 2.9.

Even though these policies are in place, Namibia is still not self-sufficient in the production of dairy and FFV products. All supermarkets (local and South African) import

other dairy and FFV products from South Africa using their parent companies in South Africa or importing agents.

Table 7.7: Namibian imports globally, the SADC and South Africa (1999 to 2003)

Year	All commodities (Million \$US)			Vegetables (Million \$ US)			Live animals and animal products (million \$US)		
	World	SADC	SA	World	SADC	SA	World	SADC	SA
1999	1520.0	1258.1	1241.4 (98.7)*	65.9	51.9	51.7 (99.6)	63.3	44.9	44.7 (99.5)
2000	1428.5	1243.8	1231.5 (99.1)	51.5	40.7	40.3 (99.1)	57.2	47.1	42.5 (90.2)
2001	1456.9	1256.4	1247.0 (99.3)	45.4	33.7	33.6 (99.7)	44.0	39.7	39.1 (98.5)
2002	1288.9	1007.7	996.8 (98.9)	46.3	32.9	32.8 (99.7)	30.0	26.3	26.1 (99.2)
2003	1402.6	1156.1	1127.9 (97.6)	51.3	38.1	37.7 (99)	37.4	30.7	30.6 (99.6)

Source: SADC Trade data (2006) * Figures in brackets represent the percentage of Namibia imports from South Africa compared to total SADC imports.

7.4 Impact of supermarket activity on the fresh fruit and vegetables sector

The impact of supermarkets' procurement strategies on the domestic FFV sector in the case-study countries was felt in a number of areas. Analysis was carried out for direct and measurable impacts as discussed below, based on the perceptions of farmers who supply to supermarkets and from key informant interviews.

7.4.1 Increased farm output and household income

Farmers who access the supermarkets (for example Shoprite) supply chain for FFV are assured of a continuous large market for their produce and earn higher incomes as shown by the results of the treatment effect model estimated for Zambia in chapter six. Ninety-five percent of farmers supplying to supermarkets reported having increased output and income on their farms (Table 7.8).

Apart from increases of output and income on both large and small-scale farms, the entrance in Zambia of foreign food-processing companies such as Foodcorp should also lead to an increased demand for fresh produce such as tomatoes and potatoes for processing. This may ultimately translate into increased production, higher income levels for farmers and increased availability of raw materials for processing.

Box 2: Foodcorp in Zambia

Foodcorp a leading South African food manufacturer/Processor entered Zambia in 2004 by purchasing 100% shares owned by the government of Zambia representing Zambia Horticultural Products Limited (Zamhort) Lusaka operation for a total of US\$ 3565000.

Foodcorp a leading South African food manufacturer has strong brands such as Simba, Enterprise, Nola, Green Giant and Harvestime. Foodcorp also a major supplier to many large South African supermarkets such as Shoprite, Pick 'n Pay and Spar. It has a total turnover over US\$ 1.8 billion. It owns factories in South Africa and South America.

The entry of Foodcorp into Zambia implies that some brands that were exported from South Africa to Zambia would now be made locally saving foreign exchange. The Zamhort plant in industrial area in Lusaka has the capacity for processing fruit and vegetables, canning and bottling. It can make products such as fruit juices, soft drinks, tomato paste, ketchup, corned beef, canned beef, jams and marmalade.

Foodcorp will also explore export markets for its products made in Zambia. Generally it is expected that local farmers (small-scale and large-scale) would gain by supplying raw materials such as tomatoes, potatoes etc the factory in Lusaka. It is expected that production at the farm level would also go up hence earning farmers' income.

The actual impact of Foodcorp in Zambia could not be elucidated by this study because by the time of this study in 2004 and 2005 Foodcorp had not yet started operating in Zambia despite having acquired Zamhort as narrated above.

Table 7.8: Percentage of farmers who have increased output and income in Zambia

Increased output and income since started supplying to supermarkets	Percent
Increased income and output	95
Income and output remained the same	5
Total N=20	100

Source: Survey results, 2005

Just as in Zambia, increased production of high value crops (fruit and vegetables) offers an opportunity for farmers to increase their income. Most farmers interviewed in

Botswana reported having increased output and income since they started supplying to supermarkets.

Production has gone up generally and this may not necessarily be due to supermarkets per se but the emphasis by the government and other stakeholders in promoting horticultural production in the country. The availability of a ready market for produce is a strong incentive for farmers to increase production. Farmers had access to the supermarkets and to the alternative market (vendors). Street vendors purchase their produce from farmers at farm gate and offer higher prices compared to supermarkets. According to the interviewed farmers, farmers prefer the supermarkets because they provide a large continuous market.

7.4.2 Increased input use

Farmers that supply to supermarkets use more inputs in their production process, which translates into higher input costs as already discussed in section 5.2.5. These farmers use more inputs such as fertilisers, chemicals and may engage in some value-adding activities to meet product specifications of supermarkets. Farmers supplying supermarkets use more labour (family and hired) compared to those who supply to traditional markets (Table 7.9).

These activities may have a multiplier effect on the agricultural sector in that more jobs could be created at farm level as well as at non-farm level thus increasing income and well-being of people in urban and rural households.

Table 7.9: Input use on farms producing FFV in Zambia

Type of farmer	Mean labour (number of people employed)	Mean input cost (kwacha)
Farmers selling to the supermarket channel N=20	8	67 2781
Farmers selling to the traditional channel N=58	4	291 423

Source: Survey results, 2005

Approximately 75% of the farmers supplying to supermarkets have increased the number of permanent and casual workers on their farms in Botswana and Zambia. The increase in the number of workers could be because these farmers have to supply a specific quantity of produce to the supermarket several days per week, which requires more labour. The labour requirement goes up due to the various tasks that need to be accomplished on time therefore necessitating hiring of extra workers. Farmers who do not access the supermarkets (who are the majority) sell their produce through the traditional wholesale and retail markets and mainly use family labour in their production process. The problem of the traditional markets is the fluctuation of prices due to produce seasonally flooding the markets. This is because the horticultural produce produced under rainfed agriculture matures at the same time. There is need to improve the traditional FFV markets as most of the produce (75%) is sold through these channels (Emongor *et al*, 2004).

Just as in Zambia, small-scale farmers supplying to supermarkets in Botswana employ more labour and use more inputs (have higher input costs) compared to those who produce for the traditional market channels (Table 7.10).

Table 7.10: Input use on farms producing FFV in Botswana

Type of farmer	Mean labour (number of people employed)	Mean input cost (Pula)
Farmers selling to the supermarket channel N=10	10	2 548
Farmers selling to the traditional channel N=3	7	2 167

Source: Survey results (2005)

Horticultural production is generally labour-intensive, especially when harvesting and preparing these crops for the market. The specification of quality by supermarkets, which sometimes includes packaging of the produce, increases the labour requirement resulting in increased labour use hence more employment of farm workers.

7.4.3 Increased availability of FFV imports.

When Shoprite started operations in Zambia in 1995, all FFV was imported from South Africa but now up to 80% of some fresh vegetables are procured from local farmers (Key

informant interviews, 2004). This implies that supermarkets such as Shoprite source and procure fresh vegetables from local producers. In cases where local production does not satisfy local demand, imports have filled the gap availing these products to consumers. Despite supermarkets' sourcing fresh vegetables from local producers, there has been an increase in imports of fruit and vegetables in the last five years (Table 7.11). This is because Zambia is not self-sufficient in the production of some vegetables such as Irish potatoes, onions and cauliflower. In the case of fruit, Zambia is not self-sufficient in the production of temperate fruits (such as apples, pears and plums), citrus fruit, bananas and mangoes. All these are imported from South Africa, which is the reason why imports seem to be increasing despite supermarkets sourcing some fresh produce (mainly vegetables locally).

Table 7.11: Value of FFV exported by South Africa to Zambia (2000 to 2005)

Year	Edible fruits (HS 08) Value in US\$	Edible vegetables, roots and tubers (HS 07), Value in US\$
2000	1 015 825	928 249
2001	1 265 534	1 429 685
2002	1 340 364	1 110 606
2003	1 014 066	1 065 140
2004	1 443 957	1 150 431
2005	1 330 106	1 274 649

Source: United Nations Comtrade (2006)

The horticultural industry is still in its infancy in Botswana. Botswana produces about 15-20% of all its horticultural product requirements with the rest being imported (Republic of Botswana, 2004a). Imports play a major role in the FFV supply chain and small-scale producers' contribution to domestic production is still small (Table 7.12). This could probably be because most small-scale producers are involved with subsistence crop production. The major crops grown for subsistence are sorghum (70% of total output), millet and maize. Most of these farmers produce subsistence crops under rainfed conditions. Crop yields are low and most rural households producing on small plots, the

size of which averages about 2.3 ha, do not produce enough to satisfy their own needs and have to purchase food from shops.

Table 7.12: Local production and importation of FFV in Botswana (2000 to 2002)

Year	2000		2001		2002	
	Production (MT)	Imports (MT)	Production (MT)	Imports (MT)	Production (MT)	Imports (MT)
Vegetables	4,702	48,549	4,712	66,953	5,284	59,098
Fruit	6,278	27,752	5,940	29,700	6,514	34,536
Total	10,980	76,301	10,652	96,653	11,798	93,634

Source: Ministry of Agriculture (2004)

There is a large deficit in production of subsistence crops (maize and sorghum) and horticultural crops (Table 7.12). Given this scenario, chain supermarkets that import fresh and frozen vegetables and fruit may be beneficial to consumers in Botswana by making these products available.

There is a move by government to diversify the economy away from reliance on mining (Republic of Botswana, 2004a). Agriculture is seen as a sector that may play a big role in the diversification of the economy and an effort is being made to improve agriculture to create employment for the people. The government is promoting horticultural and dairy production under irrigation and controlled environment such as green-houses and hydroponics.

Through these efforts, there is an emerging group of small-scale horticultural producers who are now beginning to produce for the market. They started their farming enterprises in the mid nineties and started selling to supermarkets from 2000 onwards (see Chapter 5, section 5.3). This finding concurs with that of Seleka *et al.* (2002) who found that 75% of all horticultural projects in Botswana were established from 1991 to 2001 and were mainly funded through the Financial Assistance Policy a free grant from government to farmers to start horticultural projects. With the help of the Ministry of Agriculture and other stakeholders, farmers are beginning to produce for commercial purposes.

Just as in Botswana, the horticultural industry in Namibia is still in its infancy. Namibia produces 18% of its horticultural produce requirements, the remaining 82% being imported (Table 7.13).

Table 7.13: Consumption, imports and local production of horticultural produce in Namibia (2003)

	Value N\$000	% of consumption	Mass (tons)	% of consumption
Imports	160141	82	69442	75
Local production	35327	18	23495	25
Consumption	195468	100	92937	100

Source: Republic of Namibia, 2004

The sourcing and procurement pattern could be because of adverse climatic conditions, which result in most crop production being limited to areas with reasonable average rainfall (300-700mm) in the northern and southern parts of the country. These areas are prone to unreliable rainfall patterns leading to low yields of field crops such as millet (mahangu), maize and sorghum that can be produced without irrigation.

Production under rainfed conditions is highly erratic. Under the current crop production systems, most small-scale horticultural producers cannot attain the quality standards and quantities demanded by supermarkets. Therefore, small-scale farmers in Namibia are automatically excluded from the supermarket supply chain. Therefore, small-scale farmers in Namibia are automatically excluded from the supermarket supply chain. The FFV supply chain of most supermarkets was through wholesalers (both traditional and specialised) such as Freshmark sourcing for Shoprite and Freshco sourcing for Pick 'n Pay. The wholesalers import their products from South Africa and when sourcing is done locally, procurement is from large producers who can supply produce throughout the year. For example, Freshmark sources 95% of the FFV from South Africa, and thus only five percent from Namibia. Given the current state of the supply chain of fruit and vegetables in Namibia, supermarkets have minimal impact on local small-scale farmers.

These impacts are not even possible to quantify, as most of these farmers do not access supermarkets to sell their produce.

7.5 Comparison of perceived impact of supermarkets on the FFV sector

Since the growth in FFV sales and production can also be related to a host of other factors it is difficult to attribute all the growth in sales and production to the supermarkets. From the analysis and arguments presented earlier it is clear that the growth in supermarkets at least did not have a negative impact. This is reflected in the increasing numbers of farmers entering the FFV sector in the 1990s. But this is perhaps related to the fact that in all three countries, governments are involved in promoting production of FFV to diversify their economies and have put in place policies to achieve these objectives (Table 7.14).

Operating within the limits of environmental constraints (whether farmers are producing a given product or not) and policy limitations, supermarkets (meeting the requirements of policies regulating business), both South African and local supermarkets are developing their supply chains and including local producers in case countries. Even though the number of small-scale farmers accessing the supermarket FFV supply chain is currently still small there is room for improvement as all stakeholders collaborate to enable development of efficient commodity chains in the region. Collaboration and willingness from all stakeholders should result in more producers getting access to these lucrative urban markets.

Table 7.14: Comparison of impacts in case countries

Type of impacts	Country		
	Botswana	Namibia	Zambia
Number of farmers entering into the FFV sector	Increasing	Increasing	Increasing
Effect on household income	+	-	+
Effect on labour employment	+	-	+
Effect on input as reflected in input costs	+	-	+
Policies ¹⁷ to encourage supermarkets to procure from local producers	In place	In place	In place
Government involvement	Yes	Yes	Yes

Source: Survey results (2005) and author's deduction; Legend: + positive impact – could not be quantified.

7.6 Trade flows in the SADC

The involvement of South African retail firms (supermarkets) in SADC countries may have led to increased trade in the region. Increased trade flows in various countries may be the result of other global factors such as trade liberalisation, globalisation and regional integration which are key drivers in the supermarket growth and expansion as already discussed in Chapter 2. This implies that the expansion of South African supermarkets into SADC countries may have contributed to increased trade flows in many SADC countries as discussed below.

7.6.1 Trade flows between South Africa and the case-study countries

There is generally an increasing trend in trade flow in food products especially in processed food worldwide owing to globalization (Bowen *et al.*, 1998; Rae & Josling, 2003). For the SADC region, Table 7.15 shows that the trend of trade flows (both imports and exports) between South Africa and the case-study countries (Zambia, Botswana and

¹⁷ These policies varied in the case-study countries. In Namibia, the government has set a quota, i.e. every organisation (supermarkets, wholesalers and caterers), involved in buying fresh produce must source 5% from local producers as discussed in section 4.3.3. In Botswana, farmers can apply to the Ministry of Agriculture to close borders to certain farm produce if Botswana farmers have produced sufficient quantities. The borders remain closed until domestic produce is exhausted then borders re-open to imports. In Zambia, non-tariff barriers such as licensing limit the amount of fresh produce such as potatoes entering the country.

Namibia) has been increasing. Generally, imports from South Africa to these case countries have increased more rapidly than exports, resulting in a negative trade balance between these countries and South Africa. This trade imbalance could be attributed to various factors such as increased importation of goods and services not currently produced in the SADC host nations as discussed in Chapter 4. Although there may be many factors (e.g. trade liberalisation, globalisation), contributing to the increasing trend of trade flows between South Africa and the case-study countries, the introduction of supermarkets looms large among those factors. For example data for Zambia shows that there was acceleration in the growth of imports after the introduction of supermarkets in 1995. In the period 1992 to 1994 (period before supermarkets in Zambia), annual average growth rate of imports was 1.4%, whereas average annual growth rate of exports was 58.1 % in the same period. From 1995-1999 (period after South African supermarkets entered Zambia), annual average growth rate of imports was 16.4%, whereas annual average growth rate of exports was 23%, which means growth in imports rose by more than 100 times whereas exports in the same period, was lower than the previous period. In the period 2000-2003, the annual average growth rate of imports for Zambia was about -3.9 %, whereas annual average growth rate of exports was 24% as shown in Table 7.15. The annual growth of imports supports the findings of the Regoverning markets project that the use of centralised procurement systems may pull imports into the country of FDI which later declines as supermarkets develop supplier base in host country as discussed in section 2.10. Imports may begin to rise again should the centralization of procurement involve regional and global supply chains (Vorley *et al.*, 2007). This result corroborates the results of the procurement practices in Chapter 4 which showed that supermarkets both local and South African source and procure products from local producers, and these are further corroborated by the declining share of South African imports in Zambia's imports as discussed below. Due to lack of data on the amounts of imports brought into case countries by supermarkets, this study could not estimate the percentage growth of imports that are specifically attributed to supermarkets.

Table 7.15: Trade between RSA the case countries (Botswana, Namibia and Zambia) (1992 to 2003)

Year	Zambia			Botswana			Namibia		
	Total Imports (M) from RSA to Zambia million US\$	Total Exports (X) from Zambia to RSA million US\$	Trade balance (X-M)	Total Imports (M) from RSA to Botswana million US\$	Total Exports (X) from Botswana to RSA million US\$	Trade balance (X-M)	Total Imports (M) from RSA to Namibia million US\$	Total Exports (X) from Namibia to RSA million US\$	Trade balance (X-M)
1992	163	6	-157						
1993	193	11	-182						
1994	170	15	-156						
1995	189	14	-175						
1996	254	24	-230						
1997	314	25	-289						
1998	305	33	-272						
1999	347	32	-315						
2000	652	43	-609	1525	180	-1345	1237	337	-900
2001	703	60	-643	1404	162	-1241	1336	433	-902
2002	792	111	-680	2695	249	-2446	1013	326	-687
2003	578	82	-497	3363	285	-3078	1525	285	-1239
Average annual growth (1992-1994)	1.4 %	58.1%							
Average annual growth (1995-1999)	16.4%	23%							
Average annual growth (2000-2003)	-3.9%	24%		30%	16.5%		7.2%	-5.4%	

Source: RSA. Department of Trade and Industry (2006) and UN Comtrade (2006)
Data for the period 1992 to 1999 was only available for Zambia.

7.6.2 Trend in the share of South African exports in imports of SADC countries

The share of South African exports in imports of SADC countries is high for some countries such as Mozambique, Zambia, Malawi and Angola (Table 7.16). The share of South African exports in the imports of these countries grew rapidly from 1993 to 2000 but has begun to decline since then.

**Table 7.16: Share of South Africa's exports in the imports of SADC countries
(1993 - 2004)**

Year	Mozambique	Zambia	Malawi	Zimbabwe	Tanzania	Mauritius	Angola	Seychelles	DRC
1993	43.98	50.89	37.21	31.43	2.00	9.84	6.10	10.56	2.84
1996	69.87	49.07	32.36	40.92	8.71	9.41	11.41	9.94	1.12
1999	58.48	48.25	35.30	39.80	11.02	9.03	6.73	8.10	1.71
2000	62.17	64.88	45.34	37.92	12.46	13.69	6.50	8.90	2.52
2001	64.14	44.04	39.29	37.09	10.53	12.19	9.65	5.40	4.28
2002	48.77	42.30	32.79	28.33	11.48	11.79	11.18	8.68	3.39
2003	58.97	35.81	32.06	29.87	11.43	11.59	11.04	9.08	2.76
2004	44.86	44.35	32.93	32.28	14.00	10.08	9.78	7.66	2.13
Average share	56.40	47.50	35.90	34.70	10.20	10.90	9.00	8.54	2.60
Average growth (1993-1996)	16.5%	-1.2%	-4.5%	9.1%	162.5%	-1.4%	22.9%	-2%	-26.4%
Average growth (1999-2004)	-5.2%	-1.7%	-1.4%	-4.1%	4.9%	11.6%	57.8%	-1.1%	-3%

Source: RSA. Department of Trade and Industry (2006). Website: <http://www.dti.gov.za>

Further analysis of trends of the share of South African exports in the imports of some SADC countries shows that the average annual growth rate of the share of South African exports in imports of most countries such as Mozambique, Zambia, Malawi, Zimbabwe, Seychelles and DRC has been negative for the period 1999-2004 (Table 7.16). This is further corroborated by the share of South African exports in these countries' imports which rose dramatically from 1993 to 1999 and began to decline in most countries from 2000 to 2004 (Figure 7.4). It should be noted that South African supermarkets and other South African firms have a large presence in these countries such as Mozambique, Zambia, Malawi and Zimbabwe. In countries where the presence of South African supermarkets has been small such as Tanzania and DRC the share of South African exports in the imports of these two countries is quite small.

From the analysis above, one can correlate the increased share of South African exports in SADC countries' imports with the high presence of chain supermarkets such as Shoprite, Pick 'n Pay, Spar and Woolworths in these countries.

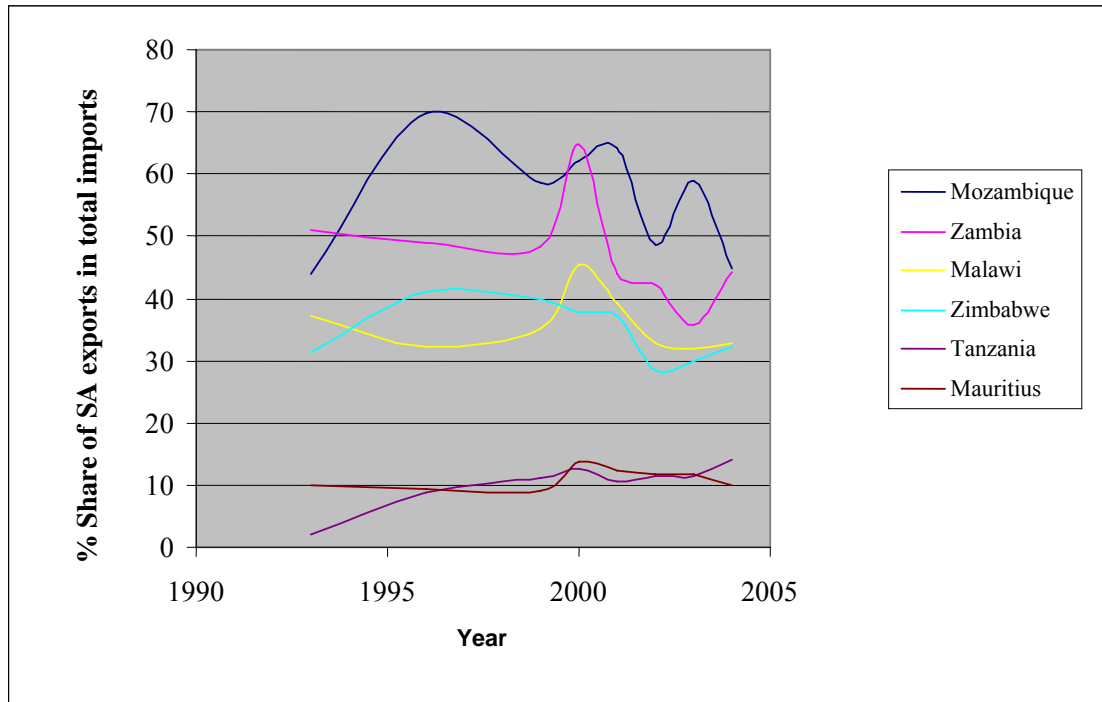


Figure 7.4: Trend of the share of South African exports in selected SADC countries' imports (1993-2004)

In the first few years of these supermarkets investing in other SADC countries, they continued to use their distribution centres in South Africa. The case to note is when Shoprite first moved to Zambia in 1995, nearly all the products including fresh produce was imported from South Africa as shown by the increasing share of South African imports into Zambia from 1993 to 2000 when it reached a peak and then began to decline. This could be because some supply chains for products such as fresh vegetables had now been developed and sourcing could take place locally. But despite this improvement more goods have continued to be exported into these countries by South African firms.

Generally, both imports of goods from South Africa to Zambia have increased as well as exports even though imports have increased more rapidly compared to exports. Generally there is a negative trade balance between these two countries. This trade imbalance could be attributed to various factors such as increased importation of goods and services not currently produced in the SADC host nations such as Zambia already discussed in

Chapter 4. Trade is making available goods and services to consumers in the case-study countries. The impact of these imports on the agricultural and manufacturing sectors is not easy to determine as there are many factors responsible for non-production of these goods such as lack of processing capacity and environmental constraint among others.

7.7 Summary

In this chapter, an analysis of the impact of the of supermarkets (South African and local) in the SADC was done taking case studies of FFV and food processing/manufacturing industries in Botswana, Namibia and Zambia using survey and qualitative data. In the FFV sector, the activities of supermarkets in Botswana and Zambia have been positive. Farmers supplying to supermarkets have increased output and income, increased use of inputs such as fertilisers and increased use of labour, especially hired labour, compared to farmers supplying to the traditional channels. Supermarkets also import FFV not produced in host countries such as apples and bananas; and those produced in low quantities such as oranges and mangoes. This information corroborates at the national level by increased FFV imports into the case-study countries in the last five years. In the food processing/manufacturing industries; the case-study of firms in dairy processing, milling, bakery/confectioneries in case-study countries shows that the entrance of chain supermarkets such as Shoprite, Spar and Pick 'n Pay in some SADC countries has resulted in increases in processing output and sales for the large companies that accessed supermarkets supply chains.

CHAPTER 8

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

8.1 Summary

The increased foreign direct investment by South African supermarkets into other African countries has been facilitated by globalisation, trade liberalisation, favourable policies (liberalization of foreign direct investment policies) in host countries. This increased investment by South African supermarkets is of concern to those involved in development because supermarkets are important markets for farmers and processors, but there is the present threat of potential exclusion of small farmers and processors from the supply chain of supermarkets. Due to the fact that African countries depend on agriculture as the backbone of their economies and small farmers being the majority, exclusion of these farmers is a real threat to livelihoods, poverty alleviation and more so to rural development in general. The major issues of concern are the strategies used by supermarkets in the sourcing and procurement of products. This may have a negative impact on small farmers and small processing firms by excluding them.

The broad objective of the study was to determine the impact of South African supermarkets on agriculture and food-manufacturing/processing development in SADC countries using Botswana, Namibia and Zambia as case studies by answering the stated research questions.

The study focused on the sourcing and procurement decisions and practices of supermarkets in selected supply chains to deduce the impact of supermarkets on individual producers, the agricultural sector and the industrial sectors in case-study countries. Supply chain management posits that there are transaction costs in transacting business along a supply or value chain. In an effort to reduce transaction costs and increase efficiency, supermarkets make sourcing and procurement decisions that impact on participants in the supply chain, which may have a spill-over effect into the agriculture and manufacturing sectors and the economy as a whole. To understand these sourcing

and procurement processes and the resulting impacts required an analysis of the supply chain and related sectors.

A number of researchers have attempted to address the issue of the rise of supermarkets and their impact on agrofood systems in developing countries. These mainly built upon the work of Reardon *et al.* (2002) in Latin America and Weatherspoon and Reardon (2003) in Africa. Since these two papers were written, more research has been carried out in Latin America, Asia and Africa. Noticeable among these is the output of the Regoverning Markets Project, which commenced in 2004. The results of phase one showed that among the many changes occurring in agrofood systems included an increased involvement of supermarkets and large processing firms in the agrofood systems of many developing countries.

The growth and expansion of supermarkets outside South Africa is a “recent occurrence”. On a continent where the majority of the population depend on agriculture, the changes occurring in the agrofood systems of the continent have implications for the poor. The dramatic increase in the number of supermarkets involved in food retail has been spearheaded by South African supermarkets. There is thus a major question about the impact of these supermarkets on agriculture and industry in host countries, because many people tend to look at these investments in a negative way. For example, many observers and reporters in local print media allude to the fact that investment by South African supermarkets in SADC countries and Africa results in stifling of agriculture and industrial production in the host countries.

This study is the first of its kind in the SADC region in attempting to quantify quantitatively and qualitatively the impact of South African supermarkets expanding into the SADC by using a case-study approach. The study developed a conceptual framework and constructs of how the sourcing and procurement decisions might impact on the region. These concepts were validated by selecting three countries, namely Botswana, Namibia and Zambia, and selecting two supply chains (FFV and dairy). In order to determine the impact of supermarkets in the region, data were collected along the supply

chain: from supermarkets, wholesalers, traditional markets and local shops, farmers, processors, and key informants.

To elucidate these impacts the study used both qualitative and quantitative methods in collecting data used in this study. A survey of 12 supermarkets, 42 local shops, 18 food processors, 30 farmers supplying FFV to chain supermarkets and 61 farmers supplying to the traditional fresh fruit and vegetables markets and dairy processors was carried out in Zambia, Namibia, and Botswana in 2004, 2005 and 2007 using questionnaires and checklists. These data were augmented with secondary data. By applying the conceptual framework developed in Chapter 3 of the study, the impacts of supermarkets on small-scale farmers, processors and agriculture and the food processing industry were elucidated. By applying the two-step treatment model, both the factors that influence small-scale farmers' choice to supply to either the supermarket or traditional market channel and the effects (impact) of participation in the supermarket supply chain by small-scale farmers were determined in this study.

The results show that the number of supermarkets has increased in SADC. Supermarkets have been in existence in South Africa for some 60 years and therefore supermarkets are not a new phenomenon in South Africa. Supermarkets growth in SADC has been gradual but increased rapidly in the mid-1990s. The growth was achieved through franchising, mergers and buy-outs of other smaller supermarkets by larger supermarkets. Since 1994, major South African supermarket chains (Shoprite, Pick 'n Pay, Spar and Woolworths) have a presence in one or more African countries. Apart from South African supermarkets, there are local chain and independent supermarkets involved in retailing food and industrial products in Botswana, Namibia and Zambia.

Supermarkets have spread from their urban niche markets to smaller towns and rural townships. Most of the supermarkets operating in the SADC have their major operations in South Africa. Currently, supermarkets account for about 50 to 60% of the total food retail market in South Africa. In other SADC countries, the market share of supermarkets in food retailing varies from 0 to 10% (DRC Congo, Angola) and 50 to 60% (Botswana).

Supermarkets operate in an environment of tough competition mainly from other supermarkets and an expanding informal sector (hawkers, street vendors and kiosks) in South Africa and the SADC.

Different supermarket chains were dominant in retailing in the three countries. Shoprite was the most expansive supermarket chain in Zambia, followed by Mellisa. In Namibia, Shoprite was also the most expansive supermarket chain followed by Pick 'n Pay in terms of retail sales. Whereas in Botswana, Spar was the most expansive supermarket chain followed by Score supermarkets. Both South African and local supermarket chains were gaining importance in retailing food and non-food products in Botswana, Namibia and Zambia.

Supermarkets (both local and South African) traded in large quantities of food, especially in urban areas. The proportion of food sales to total sales in most supermarkets was about 90% for Spar and Pick 'n Pay and varied between 62 to 90% for Shoprite in Zambia, Botswana and Namibia, respectively. The proportion of non-food sales to total sales varied between supermarkets but was in the range of 10 to 38% in the case-study countries. This implies that supermarkets were gaining importance in the marketing of food and other industrial products in the case-study countries. Most of the supermarkets handled both fresh and processed foods. Supermarkets might have impact on the food systems and industry in these countries even though supermarkets mainly cater for high- to medium-income segments of the population in Zambia and almost all segments of the population in Botswana and Namibia.

Each supermarket has its own sourcing and procurement systems, though in some cases there were similarities. Several types of sourcing and procurement practices for FFV were observed among the supermarkets in Botswana, Namibia and Zambia. These include: 1) supermarkets use specialised sourcing and procurement companies; 2) farmers deliver produce directly to supermarket stores; 3) farmers deliver produce to distribution centres; 4) supermarkets use specialised FFV wholesalers, and 5) outsourcing. Imports are important in the food supply chain of Botswana and Namibia and fairly important for

Zambia. This is due to unfavourable environmental conditions making it difficult to produce horticultural crops in these countries. In Namibia and Botswana, the horticultural industry is still in its infancy and as a result most fresh and processed food products in these countries are still imported from South Africa. In Zambia, most of the fresh vegetables are produced locally but certain fruits and processed foods (80%) are sourced from South Africa and other countries. For processed products and groceries, most supermarkets operate distribution centres through which these products are procured and distributed to their stores. The supermarkets use various methods to import these products into case-study countries such as the use of their own distribution centres located in South Africa and in some cases the use of local agents in the host country. Local supermarkets use local importing companies or agents in South Africa to import these products.

The importation of fresh produce and processed products from South Africa takes place because the manufacturing sector in South Africa is well developed and overshadows the size of the industry in the other countries. Also, the South African supermarkets operating in Botswana, Namibia and Zambia already have well-established sourcing and procurement systems in South Africa. With improvements in logistics and transportation systems, these firms use their distribution centres in South Africa to supply their stores in the SADC and other African countries. For SACU countries such as Botswana and Namibia, favourable trade arrangements and proximity to South Africa in the case of Botswana probably make it easier to import cheaply from South Africa.

The most important criteria used by supermarkets in Botswana, Namibia and Zambia in making sourcing and procurement decisions are price, volume (consistency of supply), quality and trust, respectively. The least considered criteria are location, followed by transport. Location and transport may not be an important factor in determining sourcing and procurement decisions of supermarkets because of globalisation, trade liberalisation and improvements in communication and information technology. These changes have made it possible for many multinational supermarkets to develop regional supply chains which imply that products can be sourced from anywhere in the region. The sourcing and

procurement decisions and practices of supermarkets in SADC follow similar trends occurring globally.

Most supermarket chains use centralised procurement systems or are leaning towards centralised procurement systems. Shoprite achieved complete centralisation of its procurement system for fresh fruit and vegetables in Zambia. This implies that all sourcing and procurement are done through Freshmark in Lusaka and the produce is distributed to all firm's stores in Zambia. This led to farmers in Chipata who used to supply directly to the Shoprite store in Chipata to fall off the supply chain of Shoprite because these farmers could not transport fresh vegetables to Lusaka. Fortunately for these farmers the traditional wholesale and retail markets for fresh produce were operational in Chipata making it possible for these farmers to still sell their fresh produce.

The sourcing and procurement decisions are influenced by three factors, namely environmental factors (availability of products locally, government policy and competition from other retailers), supermarkets' organisational factors (objectives of supermarkets and competitive strategy, product attributes such as quality, grades and standards and transactional attributes such as volume, price and delivery times) and farmer factors such as social capital, land and capital, for example irrigation systems and transport facilities. Owing to these factors, small-scale farmers producing under rainfed conditions and small-scale processors in the case-study countries are excluded from the supermarket supply chain. In most countries, these producers accessed other markets such as traditional wholesale markets, small shops, own factory outlets and small independent supermarkets.

To facilitate access by small-scale farmers and processors to supermarkets and other modern produce markets, government involvement in the supply chain in terms of setting policies and regulatory frameworks are necessary in facilitating the development of efficient supply chains that include local producers. In all the three case-study countries, governments are involved in varying degrees. There are trade regulations aimed at protecting infant industries such as dairy and milling industries in Botswana, Namibia

and Zambia. In the case of FFV and the dairy sector, chain supermarkets are required to source and procure products locally if the products are available locally. These policies have played a substantial role in ensuring that local producers access the supply chain of all supermarkets operating in the case-study countries.

The impact resulting from South African supermarkets' activities on host nations' agriculture, manufacturing and processing sectors are complex in that some are direct and observable while others are indirect and may occur at the level of the whole economy. Supermarkets impact directly on consumers, other businesses and local producers. These impacts are a result of the decisions made by the supermarkets to source or procure from suppliers in the host nation where they have invested or source and procure from South Africa or from other countries. Assuming that these impacts depend solely on the procurement decisions made by supermarkets, the impacts will be felt at consumer, producer and industry levels. To deduce impacts in the agriculture and industry sectors two sub-sectors, that is the FFV sector representing agriculture, and dairy sector representing food manufacturing and / or food processing, were studied.

Dualism exists in the FFV sector in the case-study countries. There are large-scale and small-scale farmers. Large-scale farmers mainly produce for commercial purposes whereas small-scale farmers mainly produce for subsistence and market surplus to local markets. Large-scale farmers may easily access supermarkets as they have the capability in terms of quantities and quality demanded by supermarkets, as some of these farms are already exporting produce to other markets such as the European Union.

Amongst small-scale farmers in the case-study countries we have those who are commercialised and produce for the supermarkets and traditional existing markets. Small-scale farmers who predominantly produce for subsistence rely on rainfall to produce crops, use family labour and use minimum modern inputs such as fertilisers and improved seed. These groups produce FFV for home consumption and sell the surplus in local traditional markets. These groups of farmers are automatically excluded from the supermarkets' FFV supply chain as they do not attain the quantities and quality of

products demanded by supermarkets. Most of these small-scale farmers are involved in the production of staple crops such as maize and sorghum, which are not sold directly through supermarkets. Furthermore, these farmers are not yet integrated into the commercial production system for FFV. These types of small-scale farmers are the majority in the case-study countries.

On the other hand, there are small-scale commercial farmers who produce FFV specifically for the market. Some of these farmers have been able to negotiate contracts individually or as groups and supply to supermarkets. These farmers decide whether to supply to supermarkets or to the traditional channel as posited in the conceptual and theoretical framework developed in Chapter 3. The choice of the channel (supermarkets or traditional markets) is a function of the set of incentives (embodied in the product and transactional attributes determined by the supermarket). In a liberalised economy, farmers and processors are free to make a choice of the channel in order to maximise utility and/or profits. To determine the factors that influence the choice made by farmers to participate in the supermarket-marketing channel and the effects (impact) of this participation was analysed using a two-step treatment regression model. In the first step a probit model was estimated and then an ordinary least-squares regression model was estimated.

The results of the probit model show that the probability of selling FFV to the supermarket is influenced mainly by ownership of tractor or vehicle, labour and distance which are all statistically significant. Labour and ownership of tractor or vehicle influence participation in the supermarket FFV positively whereas distance from farm to urban centre influences participation negatively. The probit model was highly significant at 1% significance level with a chi-square of 61.22. The model predicted 90% of the outcomes correctly.

The impact of farmer participation in the supermarket FFV supply chain on household income was estimated using an ordinary least-squares regression model in the second step of the treatment effects model. In order to estimate treatment effects (impact), the OLS

model included the dummy for supermarket participation and inverse Mill's ratio (Mills). The results showed that the model was highly significant at 1% significance level with an F statistic of 4.12. Four variables had coefficients significantly different from zero. These are the household head age, labour, distance from farm to urban centre and supermarket participation dummy. Participation in the supermarket channel has a positive impact on the farmers' income. By participating in the supermarket FFV supply chain farmers' increase income by 1060624 kwacha. Mean equality tests showed that farmers supplying to supermarkets in Zambia earned higher incomes compared to those who supply traditional markets.

The impact of supermarkets on the FFV sector has been positive for those farmers who have managed to negotiate contracts and supply to supermarkets. Ninety-five percent of these farmers in Botswana and Zambia report having increased their household incomes. These farmers also report increased use of inputs as portrayed by the high input costs compared to those who supply to the traditional markets. Farmers supplying to supermarkets also use more labour (hired and family). The total sum of effects of increased output at farm level could stimulate multiplier effects in the non-agricultural sectors by increasing the purchasing power of rural people, which may result in the improvement in welfare of both urban and rural people.

The impact of supermarkets on the dairy sector in the three countries has been positive. Both small-scale emerging dairy farmers and large-scale farmers accessed supermarkets through the dairy processors. The dairy processing companies have increased the volume of milk processed and sold since the entrance of the South African supermarket chains into the case-study countries. The increased demand for milk has also led to increased production at farm level. Availability of long life milk and the extension of the cold chain for fresh milk have led to increased milk consumption at household level. Milk quality may also have gone up especially as supermarkets set high quality standards for milk supplied to their stores, which the processors ensure by adhering to high local and international standards when processing milk. These standards are passed down to the farmers in the supply chain. For more small-scale farmers to participate in the dairy

supply chain requires that stakeholders (governments, private sector, non-governmental organisations and dairy producers) work in collaboration and partnerships.

There has also been an increasing trend in trade flows between South Africa and countries in the SADC. Total exports and imports have grown phenomenally in South Africa, Botswana, Namibia and Zambia. The share of South African exports in the imports of the SADC countries increased from the mid-1990s and reached a peak in 2000. From 2000 up to 2004, there has been a marked drop in the share of South African exports in the imports of the SADC countries. For example, the share of South African exports in Zambia's imports grew to a record high of 65% of total Zambian imports in 2000 but since then it has been declining and reached a low of 36% in 2003. This may easily be tied to the fact that South African supermarket chains such as Shoprite are sourcing close to 95% of fresh vegetables from Zambian producers.

8.2 Conclusions

Conclusions from this study are drawn by taking account of the hypotheses and research questions of the study, the results of the descriptive analysis, and the two-step treatment effects model and impact analysis of output and income, and trade flows between South Africa and SADC countries.

8.2.1 Supermarkets' growth and expansion in the SADC

Supermarkets have been in existence in South Africa for some 60 years but the growth and expansion of supermarkets in the rest of Africa is a "recent phenomenon". The growth of supermarkets is variable across various African countries. The drivers of supermarkets growth and expansion in SADC and the rest of Africa is due to globalisation, trade liberalisation, privatisation policies, favourable political and policy environments in SADC countries, changes in technology, urbanisation and changes in consumer preferences and shopping behaviour which is similar to other developing countries. The impact of the growth strategies of chain South African supermarkets such as the use of franchising similar to the fast food models of growth and wholesaling to small-retail shops in host nations may result in outcomes which may be different to those of the other developing countries in Latin America and Asia. This may imply that the

above growth strategies in SADC countries may result in positive impacts on the host nations. Many studies show that the traditional retail markets are resilient and adjust to the onslaught of supermarkets and continue trading alongside supermarkets. In the light of this the findings of Weatherspoon & Reardon (2003) need to be re-examined as the impact of chain supermarkets in host nations may not be wholesale negative as implied in the Weatherspoon & Reardon (2003) paper.

The proportion of food sales to total sales of supermarkets is in the range of between 62 and 90% in all supermarkets in the case-study countries. This indicates that supermarkets handle large quantities of food in urban areas and are important markets for farmers in Botswana and Namibia. In the rural areas and poor urban areas local shops, general dealers and traditional wholesale and retail markets for fresh produce are more important in Zambia and Botswana. At present, supermarkets mainly cater for the middle- and upper-income segments of the population in urban areas.

The growth and expansion of supermarkets is variable in different African countries. The growth and consolidation of the food retail market is high for South Africa, Botswana and Namibia which are middle income countries, with supermarkets accounting for between 50-75 % of the food and grocery retail market. In other less developed SADC countries the growth is slow and the share of supermarkets in the food retail market may be between 10-20%. Therefore the supermarkets share in retailing food is surpassed by the traditional sector in low income SADC countries for example Tanzania, Zambia, DRC Congo, Malawi, Mozambique and Angola. These results are concurring with the results of the Regoverning Markets Project for Kenya and Uganda. In the low income countries supermarkets exist side by side with traditional wholesale and retail food markets. The traditional markets are important to small-scale farmers who produce under rain fed conditions. In the light of these findings it would be prudent that governments in the less developed SADC countries encourage the development and improvement of the traditional food wholesale and retail markets alongside supermarkets if the welfare of the small-producers is to be improved in the SADC region.

Weatherspoon and Reardon (2003) advocated formation of farmer groups to mitigate the constraints of size so that farmers could be able to supply to supermarkets but the results of this study shows that a farmer belonging to a farmer group does not increase the chances of supplying to supermarkets. The finding recommending small-farmers forming groups to supply to supermarkets needs to be re-examined to ensure that the groups formed will actually assist farmers in accessing markets both local and export. More research in the ways small-scale farmers can be linked to modern food markets (supermarkets and food processors) need to be carried out in the region.

8.2.2 Sourcing and procurement practices

The analysis of the sourcing and procurement practices of South African supermarkets in case-study countries confirms the first hypothesis of the study.

The study concludes that economic (SCM) and non-economic (trust) factors guide supermarkets' sourcing and procurement practices. The criteria used by supermarkets in sourcing both fresh and processed goods were price, volume of products (continuous) supply, quality (which includes private grades and standards) and trust.

Supermarkets (South African and local) in the case-study countries sourced a large share of their stocks from South Africa. The incidence of global sourcing for food products was also observed but it is still on a small scale in the case-study countries. Over 80% and in some cases 100% of products scanned on supermarket shelves are sourced from South Africa except for staples such as grain-milled products, sugar and some dairy products such as pasteurised fresh milk. The explanation for this procurement trend can largely be attributed to the larger and more sophisticated scale of the agro-processing sector in South Africa compared to the case-study countries. In addition the three case-study countries are deficient in the production of FFV and dairy products necessitating importation. Given this scenario, supermarkets were instrumental in importing products from South Africa and thus making available products, which are not produced in these countries. In this process supermarkets provided a greater diversity of products at lower prices to consumers and thereby increasing consumer welfare dramatically.

Fresh fruit such as apples are not produced in case-study countries. These are mainly imported from South Africa. Other fruit such as oranges and mangoes are not produced in sufficient quantities in Botswana, Namibia and Zambia. To satisfy domestic demand imports play an important role in the food supply chain in these countries. Imports help bridge the gap and provide people with high quality fresh produce. In this instance, supermarkets and other importers are beneficial to these countries. The prices of imported fresh products are higher in importing countries compared to South Africa. All supermarkets (local or South African) exhibit similar sourcing and procurement patterns.

In the case of FFV, supermarkets source from both small-scale farmers and large-scale farms in Zambia and Botswana but the bulk of these products come from large farms as there are very few small-scale farmers participating on a commercial scale in the supermarket supply chain for FFV. In Namibia, supermarkets source from the few large producers who are currently producing. The sourcing pattern is influenced by environmental factors and the production systems that exist in individual countries. Farmers who produce FFV under rainfed conditions and mainly for subsistence are automatically excluded. For these types of farmers to be included in supermarkets' supply chain for FFV, farmers will have to become commercialised first.

In the processing sector, there are distinctively different channels used in marketing products. In the dairy sector between 20-35% of all products go through the supermarket outlets. In the milling sector, large-scale millers in the case-study countries supply supermarkets. Small-scale millers mainly sell to traditional channels such as wholesalers; small shops, independent supermarkets and some use their own distribution systems including agents. In the dairy sector, most small-scale and medium processors sell their products through wholesalers, small local shops and own factory outlets. For all the firms interviewed, none cited lack of market as one of their constraints. Most of these firms do not access supermarkets because of constraints such as lack of transport and long credit periods (60-90 days) before receiving payment for goods supplied. But the fact that

small-scale millers and dairy processors do not access the chain supermarkets has not had an adverse effect on these firms.

Despite the fact that the small-scale processing firms do not access the supermarket supply chain for the products they process (such as milk, yoghurt, maize, wheat flour and bread), most firms have developed their own market segments and continue to thrive in liberalised economies.

8.2.3 Impact of supermarkets on the FFV and dairy sectors

This section presents conclusions drawn from the FFV and dairy sector case studies.

8.2.3.1 Impact on individual small-scale farmers

Small-scale farmers who supply FFV to the supermarket channel earn significantly higher income compared to small-scale farmers who supply to the traditional markets channel. The study did not explore causality due to insufficient data on lagged assets.

8.2.3.2 Impact in the FFV sector

Increased number of farmers joining production of FFV

In the FFV sector, there has been an increase in the number of farmers taking up FFV production in case-study countries since the mid-1990s as deduced from the year when interviewed farmers in Botswana and Zambia started growing FFV. This could be because of increased government intervention in promoting the production of high-value crops such as fruit and vegetables to create employment for rural people and the availability of markets as supermarkets expanded into these countries.

Impact on household output and income

Participation by farmers in Botswana and Zambia in the supermarkets' FFV supply chain increases their income. Farmers who supply supermarkets have significantly higher value of sales compared to those who supply FFV to traditional market channels. Ninety-five percent of farmers supplying to supermarkets have increased their output and income since they started supplying to supermarkets.

Impact on input use

Farmers supplying to supermarkets use twice as much inputs compared to those supplying to traditional markets. Farmers supplying to supermarkets hire twice as much labour compared to those who supply to traditional markets. Also, farmers supplying to supermarkets use twice as much fertilisers and chemicals in order to produce high quality products.

Increased imports of FFV

In the three case-study countries, there is an increase in imports of fruit and vegetables to satisfy domestic demand. These include imports of products not produced in these countries and those not produced in sufficient quantities. Imports increase the choice of FFV products available to consumers. In this regard supermarkets may be beneficial in these countries.

8.2.3.1 Impact in the dairy sector

Increased availability of milk for household use

The increased involvement of dairy processors and supermarkets in the dairy sector in case-study countries has resulted in a positive impact in the dairy sector in the three countries studied. South African supermarkets' investment in case countries has expanded the cold chain for fresh milk, which has increased milk availability to consumers. Milk processing into long-life (UHT) milk products has also increased access to milk by consumers in these countries, which may have resulted in increased per capita milk consumption.

Increased milk production and processing

Dairy farmers sell milk to processors who in turn supply supermarkets. More small-scale dairy farmers are becoming involved in commercial milk production. Processors make special arrangements to enable small-scale dairy producers to participate in the supply chain. Owing to the increased involvement of large-scale processors who supply to supermarkets more milk is being produced and processed in case-study countries.

Increased milk imports to neighbouring countries

This has happened in Zambia. Companies process milk into long-life milk products, which are exported to neighbouring countries such as DRC. Milk exports from Zambia to neighbouring countries have increased in the last five years.

8.2.4 Impact on trade

The share of South African exports in the imports of SADC countries has been increasing (Republic of South Africa, 2006). The share of South African exports in some SADC countries has been on average 56% for Angola, 47.5% for Zambia, 35.9% for Malawi and 35% for Zimbabwe in the last 11 years. The share of South African exports in the imports of SADC countries has been declining. For example, since the year 2000 when the share of South African exports in Zambia's imports reached a record high of 65%, it has been falling and reached the lowest level of 36% in 2003. This may indeed corroborate the fact that imports of fresh vegetables by supermarkets such as Shoprite have declined as these supermarkets source and procure from local producers in Zambia.

8.2.5 The Role/direction of public policy

There was evidence of increased chain supermarket sourcing from local producers as a result of trade policy interventions by governments in the case-study countries. Procurement from local firms may have resulted in increased production at the firm level, but this gain may have come at a cost to society. Different policy instruments used such as tariff or local content requirement may yield different benefits and losses to producers, consumers and government. Therefore, the various policy options need to be assessed in line with the existing WTO rules to determine the true impact of these policies on different stakeholders. The research into these issues would result in adjustment of policies to only those that yield maximum benefits.

Apart from the use of trade policies other forms of cooperation among supermarkets, farmers, government and other development partners could be forged to enable dialogue

and subsequent increased sourcing/procurement from local producers which may benefit local producers and supermarkets as well.

8.3 Recommendations

The research results confirm that South African supermarket chains, local chains and independent supermarkets are growing and expanding in South Africa, in the SADC and other parts of Africa. The rate at which these firms are growing and expanding implies that these firms are going to be here for a long time. So what does this mean? It means that supermarkets will remain part of the retail landscape of many countries in SADC and Africa as a whole especially given that these countries are continuously becoming more urbanised. Supermarkets may continue to grow and increase their market share in different SADC countries and Africa if the current drivers of globalisation, trade liberalisation, urbanisation, changing technology and consumer tastes continue.

Given this scenario, it would be useful for all stakeholders involved in the development process to put their heads together to ensure that all people in SADC and Africa benefit from these changes that are unfolding in front of us.

8.3.1 Inclusion of small-scale farmers and processors in markets

The results of the study confirm that in the FFV sector, both small-scale and large-scale farmers are accessing the chain supermarkets supply chain for vegetables. Small-scale farmers who supply to supermarkets earn a significantly higher income compared to those who supply to traditional markets. These farmers (supplying to supermarkets) use more inputs such as labour and fertilisers, better seeds and irrigation systems. This implies that small-scale farmers can and are able to access the supermarket channel. Increasing the numbers of farmers who participate in the supermarket channel can lead to increased output in the agricultural sector resulting in improvement of household incomes as people obtain employment on farms supplying to supermarkets. There could be spill-over and multiplier effects related to increased off-farm activities such as increasing sale of inputs such as fertilizers, chemicals and increased use of inputs used in processing on-farm. However, the number of farmers supplying to supermarkets in SADC countries is

still small compared to those who are left out. This is a matter of concern which requires to be addressed and urgently as well.

Ways should be sought on how to increase the participation of small-scale currently subsistence farmers and small-scale processors in the supply chain of these highly sophisticated supply chains of supermarkets. This is an arduous task but not impossible. To attain this will require participation by all stakeholders. The recommendations below suggest ways on how to address this issue.

- Formulation of public policy that regulates the sourcing/procurement of supermarkets that ensures local producers are included in the developing supply chains of supermarkets in the case-study countries should be monitored and evaluated to ensure that they achieve the desired outcomes.
- Providing incentives that encourage small-scale subsistence type farmers to adopt FFV production that is marketed through supermarkets in case-study countries.
- Capital either in form of grants or loans should be provided to small-scale farmers to enable them purchase inputs of production such as irrigation systems, purchase inputs such as fertilizer, improved seed and chemicals. This will encourage them to produce high quality and large volumes of produce to meet the requirements of supermarket buyers.
- The results of the probit model show that membership of farmers' organizations may significantly reduce participation in the supermarket channel. Nevertheless the role of farmer organizations such as co-operatives in assisting farmers to access the supermarkets should be further evaluated in SADC countries to determine constraints in these organizations and ways to improve the organizations so that they may offer a comprehensive package including better marketing services than those that are being provided currently.
- The traditional markets for FFV products and processed products should also be improved and developed as these are easily accessed by producers in case-study countries. This will ensure that these markets continue serving more especially small-scale farmers and processors, and are also important to low-income

consumers in these countries. The fresh-produce markets such as Soweto in Zambia should be improved in terms of hygiene and flow of information to participant farmers and consumers alike.

8.3.2 Impact of supermarkets on agricultural and industrial development in SADC region

At sector level, there appears to be increases in output on farms producing fresh milk and FFV as well as increased output in manufacturing/food processing firms in dairy, milling, baking and confectionery products in case-study countries. This implies that production sectors have not been affected negatively as many observers would imagine. From these results, it is necessary to approach the supermarkets and their related impacts with care because some of the impacts have been shown to be positive especially on producers who access the supermarkets while some have been negative especially on small businesses. To estimate the total impact of supermarkets in the agrofood system and economy of case-study countries needs a more robust impact model (such as general equilibrium models). Presently, owing to the unavailability of data this impact has not been exhaustively determined in this study because it uses a partial model. Based on the preliminary results generated this study recommends the following:

- It is necessary to assess the various products each country produces and imports to find out whether an individual country has comparative advantage. This will enable countries to develop, improve and strengthen the products and services for which a country has comparative advantage having taken into account environmental and other economic factors.
- There is need to carry out research to evaluate the impacts of trade policies which have been set up to ensure that supermarket source and procure from local producers in case-study countries.
- To foster co-operation and good will the citizens should be educated about the role that multinational firms play in the supply chain of various products in the region.

8.3.3 Recommendation for further research

As the research results relate only to the three case-study countries and used partial analysis (not all sectors covered), caution should be taken in the application of these results to other countries. Therefore the recommendations for further research are as follows:

- As data become available it will be necessary to carry out more research on the impact of supermarkets on the economies of these countries. General equilibrium type of analysis (GE modelling) would provide a more holistic analysis of these impacts to households, firms, trade and the economy as a whole.
- Research on the models of small-scale farmer and processor participation in the supermarket channel should be carried out and those found working well could be applied in other regions.
- More research on the practices of supermarkets in their role as oligopsonists in the region should be done.