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Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org



DIAGNOSTIC STUDY

ON

GREATER TZANEEN FRUIT & VEGETABLE CLUSTER

LIMPOPO PROVINCE

Compiled

by

D T Mpala



TABLE OF CONTENTS

List of Acronyms

ARC:	Agriculture Research Council
BDSPs:	Business Development Service Providers
BMOs:	Business Membership Organisations
CDP :	Cluster Development Programme
CDA:	Cluster Development Agent
DLR:	Department of Land Reforms
DAFF:	Department of Agriculture, Fisheries and Forestry
DoA:	Department of Agriculture
EU:	European Union
FNB:	First National Bank
GAP:	Good Agriculture Practices
Ha:	Hectares
LM:	Local Municipality
MAFISA:	Micro Agriculture Finance Institute of South Africa
MT:	Metric Tons
NAFTA:	North American Free Trade Agreement
PVC:	Poly Vinyl Chloride
SAAA:	South African Agri Academy
SWOT:	Strengths, Weakness, Opportunities, Threats
ZAR:	South African Rands

CHAPTER - 1
INTRODUCTION

Tzaneen and Ba Phalaborwa are major areas of fruit and vegetable cultivation in Limpopo province of South Africa. The cluster spread in 90 kilometers radius with principle firms spread at a maximum distance of 17 kilometers apart. At present the 5 firms owned by black farmers are considered as principle firms with few more firms in near future under Cluster Development Programme. Other than principle firms there are 39 commercial firms and 15 semi commercial firms operating within the cluster. Mangos, Litchis , Avocados, Tomatoes, Pepper dew, pumpkins are the major fruits and vegetables cultivated in the region. However for proposed CDP a network of 5 semi commercial firms who are in close proximity to each other with similar issues were considered for proposed interventions during initial stages. The estimated turnover of the network firms is 2 million ZAR catering mainly to the local and national markets providing direct employment to 55 persons.

1.1 Aim of study

a) To have an insight into the strengths ,weaknesses, opportunities and threats of the cluster

b) To identify gaps in linkages for the future cooperation among various stakeholders so as to establish shared cluster goals

c) To identify key issues that will determine action plans for the future and sustainability of the cluster

d) To collect information that will feed into the monitoring and evaluation system of the cluster

1.2 Methodology

The report is based on the information & data gathered from cluster firms, Support firms like raw material suppliers, machinery suppliers, BMOs, concerned institutions through Primary and Secondary Survey. While the secondary survey is through study of periodicals & literature on the subject matter, the primary survey is through unstructured Questionnaire and informal Discussions.

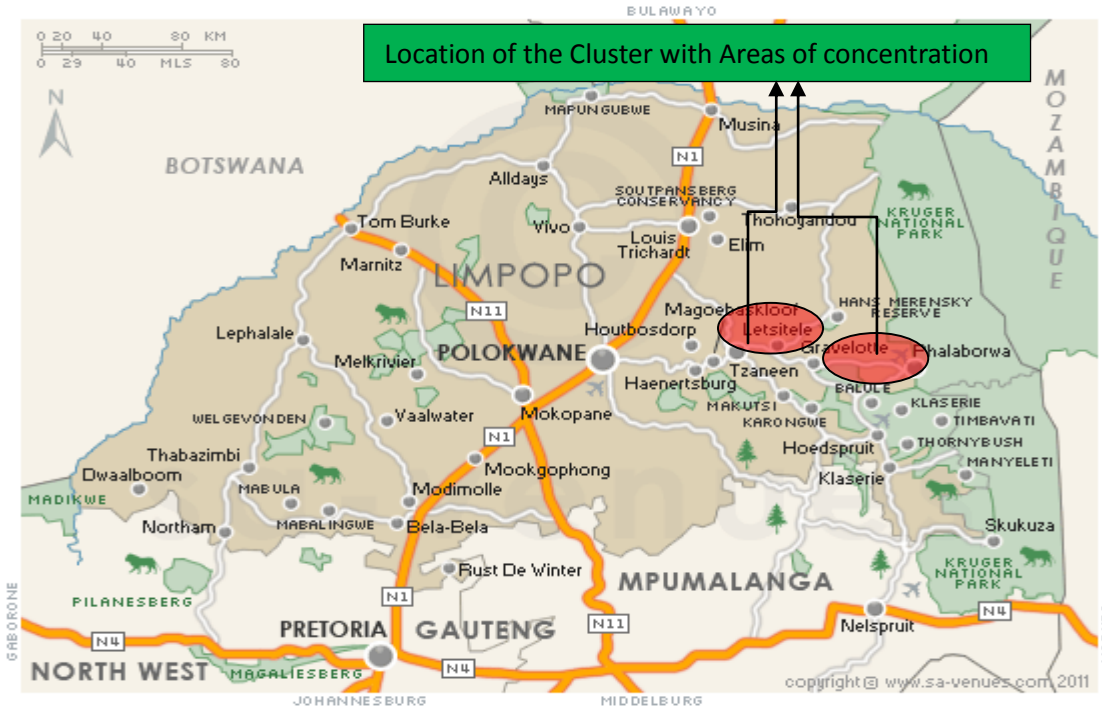
CHAPTER - 2

PROFILE OF THE CLUSTER

3.1 Location

Tzaneen and Ba Phalaborwa are the major areas of concentration within the cluster. The Limpopo province is well connected by Road. The cluster lies 421 Kilometers from Johannesburg. The cluster stretches between Greater Tzaneen and Ba Phalaborwa municipalities. It covers part of Litsitele and Gravellotte areas and it lies at the heart of fruit and vegetable firms. The cluster stretches for close to 90 kilometers from one end to the other. The members are at a maximum distance of 17 kilometers apart. At the time of the survey the cluster consisted of 5 enterprises. Two more enterprises which are still at the initiation phase will be added to the list.

Figure 2.1 : Location Map of the Cluster



2.2 About the Cluster

Limpopo is the most northern province of South Africa covering an area of 125 755 square. kilometers which accounts for 10.3 % of South Africa's total land area. The 2010 population estimates lie at 5.4 million. The climate in Limpopo is defined by a summer rainfall, hot and humid conditions, a frost free and mild winter. These weather conditions give Limpopo a competitive advantage in the production of tropical and sub tropical crops. The agriculture in Limpopo is characterized by extensive cattle ranching, tropical fruits production such as bananas, litchis, pineapples, mangoes and paw paws as well as citrus fruits. Potatoes and vegetables are also produced on a large scale.

The following depicts the percentage share of the Limpopo products on the SA market in 2010 (SA info report incorporating SA year book)

- Mangos 75%
- Paw paws 65%
- Citrus bananas, Litchis 25%
- Avocados 60%
- Tomatoes 60%

This above data confirms that Limpopo is one of the major hub for tropical fruits in South Africa.

However its unorganized nature, poor growth of firms due to lack of infrastructure facilities, limited skill sets of workers in advanced cultivation and processing techniques, competition from other regions are effecting the growth of the cluster.

2.3 Vital Statistics of the Cluster

- There are 5 firms in the cluster producing 800 MT of Mangos, Litchis , Avocados 170 MT Tomatoes, 63 MT of pepper dew, 90 MT of pumpkins, and 60 MT of other vegetables per annum.(estimated figures.)
- The estimated turnover of the cluster firms is 2 million ZAR catering mainly to the local and national markets.
- The total area under cultivation by 5 principle firms is 181 Hectares
- The cluster firms are providing direct employment to 55 and indirect employment to 40 people depending upon the season.
- The average earnings of the skilled workers ranges from 1200 to 1300 ZAR where as for unskilled range is between 900 to 1100 ZAR

2.4 Historical evolution of the cluster

- The Tzaneen and Baphalaborwa area is one of the fertile lands of South Africa and has large number of commercial firms which are growing various vegetables and fruits since generations.
- Easy availability of seedlings, Chemicals, seed and fertilizers within the province is another reason for the development of the cluster
- Most of the people in this area are engaged in agriculture besides mining since early part of 19th century.
- All these factors have prompted five principle firms considered under CDP to start fruits & vegetable cultivation in the region during late nineties

- All the principle firms are owned by Black Farmers and fall under micro enterprise category
- Post 1994 saw the national and local governments come up with policies to promote black commercial farming. All of the 5 enterprises are in black hands since 1999.
- Considering the success of the existing units few more units are going to be established by the end of 2012.

CHAPTER - 3

GLOBAL AND NATIONAL SCENARIO OF FRUITS & VEGETABLES INDUSTRY

3.1 Global Scenario

Rising incomes, falling transportation costs, improved technology, and evolving international agreements have led to substantial growth in the volume and variety of fruits and vegetables traded globally. Three regions the European Union (EU), the North American Free Trade Agreement (NAFTA) area, and Asia (East, Southeast, and South)—are the major destinations, as well as the major sources of supply, for this trade. All three regions depend on Southern Hemisphere countries for imports of juices and off-season fresh fruits, and on equatorial regions for bananas, the leading fresh fruit import.

Fruits and vegetables have claimed an increasing share of world agricultural trade, from a nominal value of $3.4 billion (10.6 percent) in 1961 to nearly $70 billion (16.9 percent) in 2001. The variety of offerings has increased as well. Bananas, apples, oranges, and tomatoes accounted for over 30 percent of the total fruit and vegetable trade in the 1960s and 1970s, but by the end of the 1990s they accounted for less than 20 percent. Fresh grapes, fresh vegetables, frozen potatoes, tree nuts, and other fruit and vegetable products are entering world trade channels in increasing quantities.

Although the available data show that about 320 countries (roughly divided between importers and exporters) participate in global trade in fruits and vegetables, trade is not evenly distributed. A few regions—basically high income regions—dominate world commerce in fruits and vegetables. The largest importers of fruits and vegetables are the

EU, the United States, and Japan. High-income regions are also among the largest exporters, led by the EU and the United States. Some developing countries are large exporters, however, including Mexico and China.

Trade in fruits and vegetables has become steadily more important over the last decades. The composition, volume, and direction of this trade have changed as incomes and insistence on quality have grown on the demand side, while technology and trade agreements have influenced the supply side. Lower prices and greater availability of produce year-round, in tandem with increasing incomes, have enhanced the array of fruits and vegetables in the global consumer's basket of goods. Other factors, such as concern for a healthy diet and improved handling and transportation, have furthered the globalization of fruit and vegetable trade.

Globalization of markets is likely to continue as the basic factors of supply combine with innovations in technology and lower trade barriers, enabling suppliers to meet the preferences of a more affluent clientele. Developed countries will continue to dominate global trade in fruits and vegetables, but new varieties will find their way into the diets of the relatively affluent everywhere.

The above scenario clearly indicate that to meet the demands of international markets the cluster need to be more organized with due emphasis on quality and organic cultivation to capture niche markets of EU, a major importer of fruits and vegetables.

2.2 National Scenario

The following table shows that the total production of mangoes and Pawpaws is on declining trend while their gross value has shown an increasing trend. Seasonality, poor cultivation practices are some of the reasons for the declining trend of production where are inflation is the main reason for increasing trend of the gross value.

Table 3.1 : Production and Sales Statistics of Mangoes and Papayas

Year July to June	Mangoes				Pawpaws			
	Total production	Gross value	Sales on markets[1]		Total production	Gross value	Sales on markets[1]	
			Volume	Average price			Volume	Average price
	t	R1 000	t	R/t	t	R1 000	t	R/t
1980/81	14 233	4 655	10 907	366	24 643	3 820	18 104	184
1981/82	5 134	2 899	3 976	667	19 374	3 951	14 520	244
1982/83	14 408	7 745	10 683	574	19 577	5 818	14 873	348
1983/84	18 791	8 187	12 764	543	19 761	6 260	15 033	373
1984/85	17 402	8 766	10 062	680	23 240	7 365	17 693	373
1985/86	22 403	12 011	13 147	664	22 975	7 208	17 472	368
1986/87	28 162	16 820	18 510	713	27 521	9 634	20 883	403
1987/88	22 621	14 658	13 375	863	30 923	11 468	23 114	435
1988/89	24 600	20 075	14 114	1 096	25 921	11 935	19 217	550
1989/90	25 801	25 484	16 311	1 152	30 019	17 461	22 648	687
1990/91	28 227	28 678	14 602	1 355	26 188	18 680	19 842	842
1991/92	32 741	37 020	14 441	1 601	26 494	18 275	19 619	821
1992/93	34 682	45 524	13 925	1 819	14 965	17 095	11 395	1 343
1993/94	39 117	64 693	17 550	1 699	22 116	20 497	16 693	1 088
1994/95	36 332	65 308	14 485	2 179	19 576	19 111	14 624	1 149
1995/96	33 561	63 466	14 594	2 472	24 310	25 675	17 667	1 284
1996/97	31 580	65 815	13 108	2 674	25 535	26 398	18 942	1 195
1997/98	41 717	88 001	18 170	2 554	22 393	28 694	15 559	1 595
1998/99	70 445	111 072	20 852	2 456	23 208	35 168	17 029	1 720
1999/00	66 059	107 036	20 166	2 487	23 550	40 182	16 774	2 004
2000/01	67 851	118 526	17 336	2 782	19 516	33 745	13 493	2 148
2001/02	95 568	168 338	24 504	2 625	22 202	41 361	15 368	2 285
2002/03	74 033	178 227	16 562	3 592	15 449	40 443	11 248	3 142
2003/04	79 943	168 568	16 988	3 779	12 648	37 541	8 745	3 759
2004/05	93 420	191 299	18 276	3 694	16 904	41 408	11 904	3 046
2005/06	63 879	139 108	16 169	4 269	14 467	47 657	10 785	3 916
2006/07	80 143	172 506	20 098	3 771	14 350	45 278	10 182	3 911
2007/08	88 189	210 228	18 994	4 570	17 436	61 116	13 005	4 103
2008/09	42 378	180 479	14 367	4 849	13 725	58 584	10 144	5 049
2009/10[2]	46 867	186 308	15 141	5 946	13 534	58 255	8 948	5 231

The production of the vegetables since last 7 years has seen no major change. While Tomatoes have shown gradual growth, the production of Potatoes and pumpkins showed checkered growth. The poor cultivation techniques in majority of the areas and frequent floods in some of the regions are some of the reasons why there is no considerable growth of vegetables.

Table 3.2 : Quantity of important Vegetables Sold in Major Markets of South Africa

Product	2004	2005	2006	2007	2008	2009	2010[2]
	1 000 t						
Potatoes	900,1	895,2	954,1	934,0	964,5	845,7	935,8
Tomatoes	240,4	255,8	251,8	247,1	258,0	252,3	258,9
Cabbages	145,1	129,3	117,8	107,0	114,7	102,3	113,3
Onions	285,5	283,0	287,0	255,4	298,5	287,8	311,1
Pumpkins	68,1	64,8	61,5	59,0	57,1	51,5	50,4
Carrots	91,4	89,4	88,0	86,4	96,7	91,5	85,0
Gem squashes	25,3	23,4	22,6	21,6	20,8	22,1	20,6
Sweet potatoes	28,8	26,5	20,0	20,9	21,6	26,7	32,1
Cauliflower	13,4	11,8	10,1	9,5	10,5	9,0	8,6
Green beans	14,4	14,5	13,4	12,6	10,8	12,4	12,9
Hubbard squashes	34,2	37,9	34,6	31,3	29,4	26,0	22,0
Beetroot	34,9	36,4	33,9	35,7	34,6	37,8	35,0
Cucumbers	12,7	12,6	13,0	13,7	14,3	14,0	25,5
Lettuce	28,0	28,3	28,1	26,6	29,9	26,6	26,4
Green peas	0,4	0,5	0,3	0,3	0,4	0,3	0,3
Green mealies and sweetcorn	2,9	3,9	3,5	3,5	3,9	3,9	3,7
Marrows	0,3	0,3	1,0	1,5	1,4	1,8	1,3
Turnips	0,8	0,7	0,7	0,7	0,7	0,6	0,6
Butternut squashes	67,8	80,4	74,6	76,6	79,2	77,6	91,2
Other	60,3	68,1	63,5	68,6	74,4	76,2	59,3
Total	2 054,8	2 062,8	2 079,5	2 012,0	2 121,4	1 966,1	2 094,0

(Source : http://www.daff.gov.za/publications/publications.asp?category=Statistical+information

Thus adherence to advanced cultivation practices to increase the productivity, proper flood effect mitigation planning are very important factors to be addressed in major fruit and vegetable cultivation areas of the country.

CHAPTER - 4

TECHNOLOGY & PROCESS

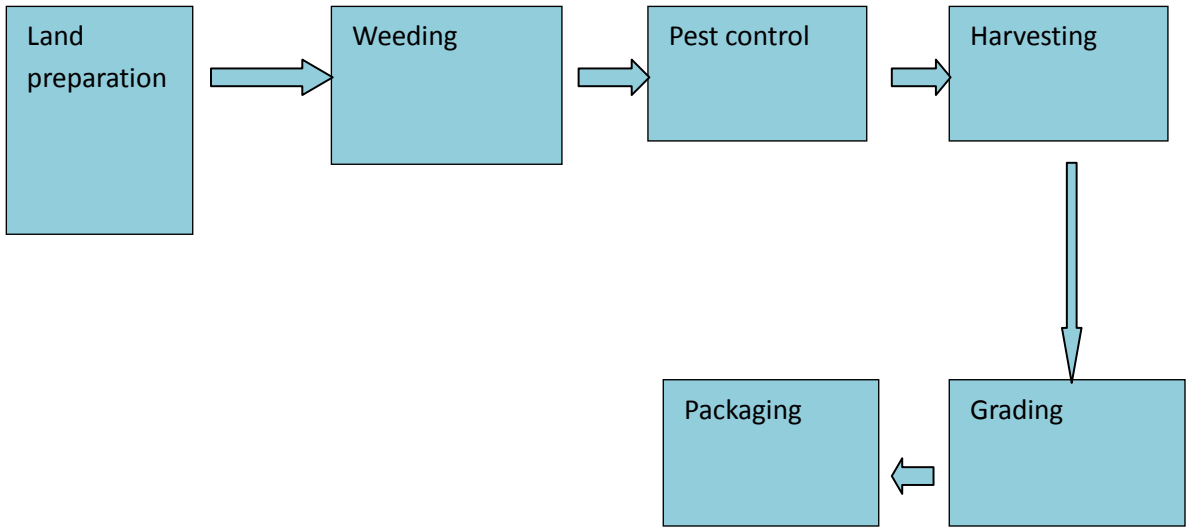
4.1 Product

The cluster is into producing fruits and vegetables. The fruits include mangoes, litchi, and citrus fruits. The vegetables produced in the cluster are tomatoes, cabbage, pepper dew, green pepper and okra.

4.2 Production Process

The production process starts with land preparation. This is done using tractor drawn implements such as the mould board plough, disc plough and harrow. The follow up production process involves weeding and pest control. Weeding is mostly done by temporary employees using either their hands or basic garden tools. The pest control involves the use of hand held knap sack sprays particularly for vegetables. Tractor drawn sprays are rarely used and if used are normally hired from nearby commercial farmers. Harvesting involves the hand picking of fruits and vegetables. No machinery is involved. At this stage the produce is simply picked into boxes, crates or bags and hauled into storage. In the storage facility grading as per quality and size takes place. The entire exercise is done by hand. The graded produce is then packed into either card board boxes, PVC crates, or synthetic bags. The packed produce is then ready to be supplied to the markets.

Figure 4.1: Production flow diagram



CHAPTER - 5

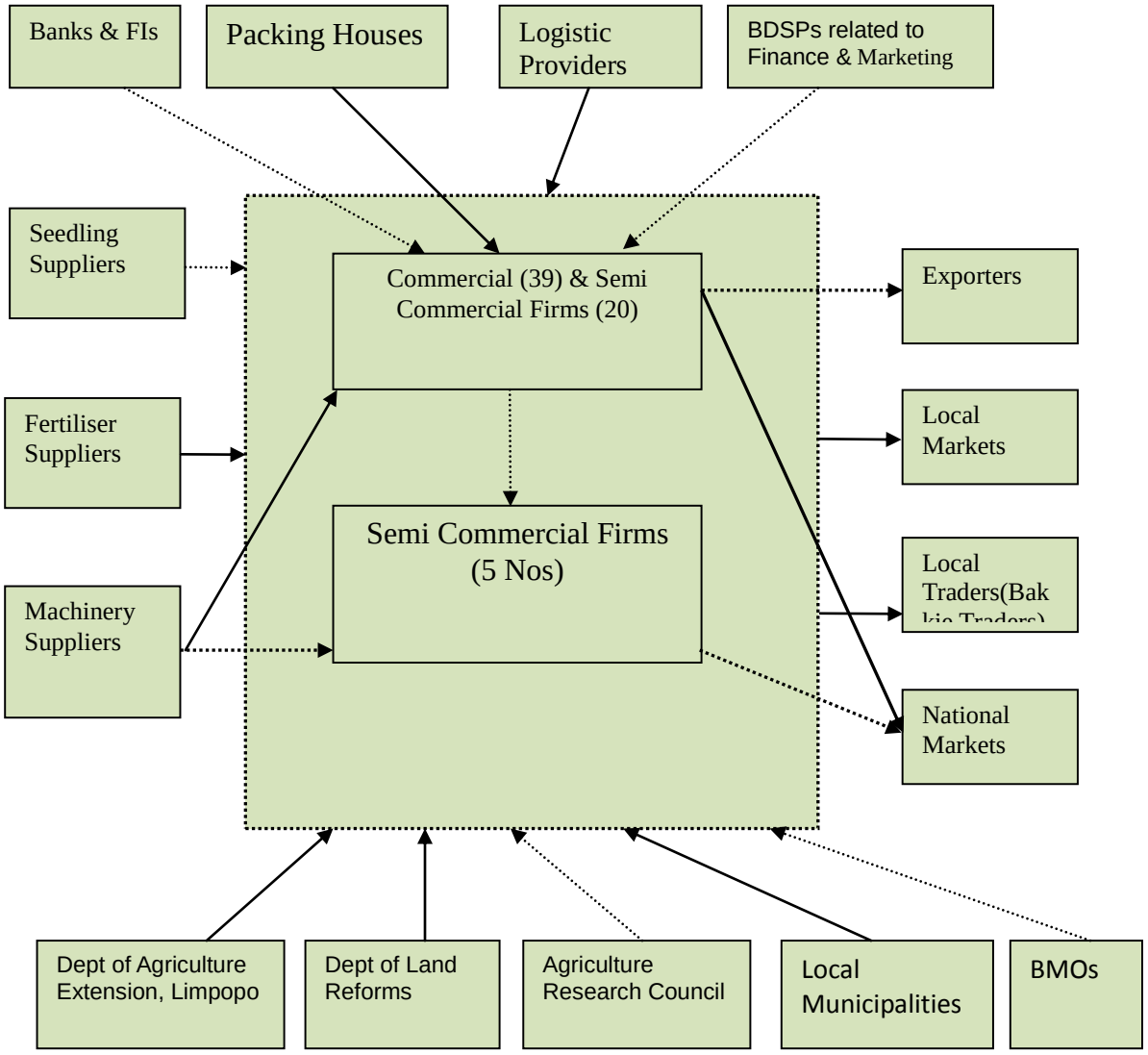
BENCH MARK CLUSTER / FIRM

In the vicinity of the cluster there are a number of commercial farmers who grow the same crops as the cluster members. On e of these farmers is Dr Charles Weiss. He operates on a 100 + ha farm. The main crops are citrus fruits . This enterprise is very well equipped in terms of the machinery and handling facilities such as pack house, storerooms, cold chain and haulage equipment. All farm activities are highly planned and executed professionally. This is facilitated by division of farm operations through the establishment of departments. The departments are administration, technical, security, field and management.

(Can we elaborate why it was taken as bench mark cluster? Please emphasize on production costs, better cultivation methods adopted, marketing channel chosen etc. so as to compare the same with the principle firms and understand gaps)

CHAPTER - 6

CLUSTER MAP AND CORE CLUSTER ACTORS



Key

Strong linkage: ——→

Poor linkage ·····→

Absence of Any Arrow : **No Linkage**

Dotted Square: **Poor Linkage**

6.1 Cluster Firms

There is very limited interaction between the commercial and semi commercial farmers. The link exists mainly through the procurement of planting material such as seedlings. The two entities belong to different commodity groups

Table : 5.1 Distribution of Cluster firms

Type of firms	Export	National	Local
Commercial	12	12	15
Semi commercial	0	20	20
Subsistence	0	0	0
Other	0	0	0

The above table reflects that some of the commercial firms are not only catering to local and national markets but also export firms. However all semi commercial firms are catering only to local and national markets.

Different firms in the cluster are in to cultivation of different products and the following table depicts the production pattern of cluster firms.

Table : 5.2: Production of Cluster Firms

Type of firms	Cabbages	Tomatoes	Mangoes	Citrus fruits	Butternut	Green pepper
Commercial	18	8	20	23	12	
\Semi commercial	20	20	10	3	20	12
Subsistence	0	0	0	0	0	0
Total	38	38	30	26	32	12

6.2 Horizontal linkages

There is a complete absence of horizontal linkages between the principle firms in the cluster. No joint activities have taken place among them. The underlying fact here is that there is no association or network that brings the cluster members together.

6.3 Backward linkages:

There is an existence of vertical relationships between the cluster members and input and raw material suppliers. Most of the raw materials are sourced locally from dealers in nearby Phalaborwa and Tzaneen. The pepper dew farmers have a contractual relationship with Pepperdew International. There is an exchange of information between the cluster members and their suppliers. This is shown by the demonstrations on new products that the suppliers always carry out at farm level. The relationships are sometimes unstable as is the case with the produce contracts that are sometimes not renewed. The cluster members lack capital to adapt some of the innovations such as the tractor drawn spraying equipment and modern pack houses equipment.

The cluster firms procure their machinery and backup parts from nearby dealers. The equipment is normally procured on a cash and delivery service. However there are good linkages between the two sides as seen by the provision of technical backstopping and minor repairs done by the dealers. Demonstrations and training on new equipment is also part of the package.

While the linkage of support firms with commercial farmers appears to be strong same is not the case with the semi commercial farmers.

5.3 Present status of support firms in the cluster

Type of firm	Number
Raw materials	5
Machinery suppliers	3
Chemical suppliers	6
Other	0
Total	14

6.4 Forward Linkages

There is some strong forward linkage with the fresh produce markets in Johannesburg, Pretoria and of late with Springs. The link is established through the marketing agents. The marketing agents who operate from the markets will take 5 to 7% commission with 5% commission to market authorities. These agents will sell the produce to wholesalers and exporters and then they will give the total amount to growers after deducting their commission. The profit margin for the grower usually ranges between 7 to 10% based on seasonality and demand. The entire process will usually take one week once the consignment reaches the market. So the contract normally will be on assignment basis. However some growers have long term contract with the agents where in they supply the produce and returns will be on monthly or per season basis.

The local market which comprises of wholesalers, retail chain stores and other independent buyers such as bakkie traders are also linked to the firms. It is however noted that sometimes the link is on a short term contractual basis.

6.5 Role of Associations

The farmer associations existing within the cluster area are the National Farmers Union, Transvaal Agricultural Union, Agri SA, SA Mango Growers Association and SA Avocado Growers Association besides Agribusiness chamber. Most of the associations cater mainly to the commercial farmers. In the Cluster only one enterprise is a member of the National Farmers Union. The main function of these associations is providing product specific information, market information, and handholding support in acquiring loans.

6.6 Public institutions

The public institutions operating in the cluster are the Department of Agriculture, the department of Rural Development and Land Reform, Agriculture Research Council and the local Municipality. These authorities have pro grammes and policies formulated to assist the farmers within their jurisdictions. One example is the Recapitalization Program where a mentor has been selected to assist firms which are in distress.

Some of the issues noted about Public Institutions:

- There is poor dialogue and contact between the public institutions and the cluster firms
- The public sector seems to be unaware of the requirements and priorities of the Farmers
- Policies are formulated without the consultation of farmers

Table 5.4: List of Institutions

Institution	Number
Public	4
Private	0
Other	0

6.6 BDS Providers

Table 5.5: List of BDS Providers

BDS Provider	Public	Private
Marketing	0	1
Quality	0	0
Banks	4	0
Mixed(Marketing& Quality)	0	1
Other		
Total	4	1

The service providers observed in the cluster are*:*

1) The department of agriculture extension division which provides training.
2) Agricultural Research Council that provides training and technical support.
3) Financial institutions: Commercial banks, Land bank, private funders, state. Most of the banks provide short term, medium term, and long term loans. The loans are requested for infrastructural development, purchase of inputs .

Other than the above SA Agri Academy , Transporters and agricultural mentor are the main service providers active in the cluster.

Except for 2 firms linkages of the firms with the banks is very poor. Requests for collateral prohibit farmers from seeking credit. Very few farmers request credit as they are not aware of credit products. The credit cost is also high as such farmers cannot pay back loans

regularly. Most of the Enterprises are not insured leading to high business risk. Another issue is that of inability of the farmers to prepare and submit proper business plans.

6.8 Current Institutional Matrix

	DoA	DRDLR	LM	Banks	BMOs	SA Agri Acad	Transporters	Agri Mentors
Commercial Firms	H	H	H	M	M	M	H	H
Semi Commercial Firms	M	M-	M	L	L	M	M	M

L = Low M = Medium H = High

Abbreviations: DoA: Department of Agriculture, DRDLR: Dept. of Rural Development and Land Reforms, LM: Local Municipality,

(Please Check the data)

CHAPTER - 7

ANALYSIS OF BUSINESS OPERATION

7.1 Backward Integration

7.1.1 Input

The cluster firms procure required raw materials from seed suppliers, chemicals & fuel Suppliiers and traders which are operating from within the cluster. No credit is available for any inputs. Inconsistent seed supply along with high price fluctuations is severely affecting the economics of scale for majority of the firms. The other raw materials chemicals, fuel are procured from local traders in small quantities. No common procurement of raw material is observed in the cluster.

7.1.2 Machinery Suppliers

All the tools and spares are available within the cluster from the suppliers. For major machinery in cultivation and processing, the cluster firms are procuring from manufacturers/ suppliers of Polokwane, Johannesburg and neighbouring towns. The routine maintenance was done by the experienced workers and for any major breakdowns the firms will depend on suppliers. No major problems observed in the cluster with regards to sourcing of machinery.

7.2 Production and Technology

The cultivation and processing technology used is still crude and conventional in the cluster. Poor pest and frost control, disproportionate use of chemicals and fertilizers are some the cultivation and process related issues. Lack of awareness and working capital are some of

the reasons for effecting cultivation. Grading and quality of the produce is also not satisfactory when compared to the products coming from Johannesburg or other competing regions. Packing also need to be modernized so as to tap export market or big market chains. No outsourcing of any part of the process is observed in the cluster and the entire work is done by principle firms

Production process issues

The production process is characterized by low levels of input utilisation, limited adoption of advanced machineries such as motorized spray pumps besides unreliable field level machinery. There is a general shortage of post handling facilities particularly the cold chain facilities.

7.3 Market

The fresh produce is sent to the national markets where it is sold through agents. The markets are Johannesburg Fresh produce market, Tshwane fresh Produce market and Springs. Locally the produce is sold to Spar in Giyani, to local wholesalers and retailers as well as to bakkie traders who order for resale somewhere else. There is no mechanism or network whereby cluster firms can do direct marketing at national level observed in the cluster and they entirely in the hands of agents leading to poor economies of scale. No visible direct exports observed in the cluster. Limited produce, lack of collective marketing, low awareness levels on export procedures and policies are some of reasons for over dependency on agents.

7.4 Business management

The management of business is done by the enterprise owners particularly for the semi commercial farmers, where as commercial farmers employed managers for financial and marketing management.

7.5 Skills

There is an acute shortage of skills in semi commercial sector. These skill include production skills, grading, packaging , marketing and even communication. In the commercial sector majority of these problems were not observed.

7.6 Social dynamics

The semi commercial sector experiences lot of labor attrition to the commercial sector. This is triggered by the low wages that are offered as compared to commercial farmers. This movement of labor is also towards the mining and tourist industries that are in proximity to the firms which offer higher wages. There is an influx of immigrants into the firms particularly to the semi commercial sector as they can accept the low wages. This has also triggered some social conflicts such as xenophobic orientation.

7.7 Value chain analysis

The value chains presented below are for the main crops grown by the cluster members:

Figure 7.1 Mango Value Chain

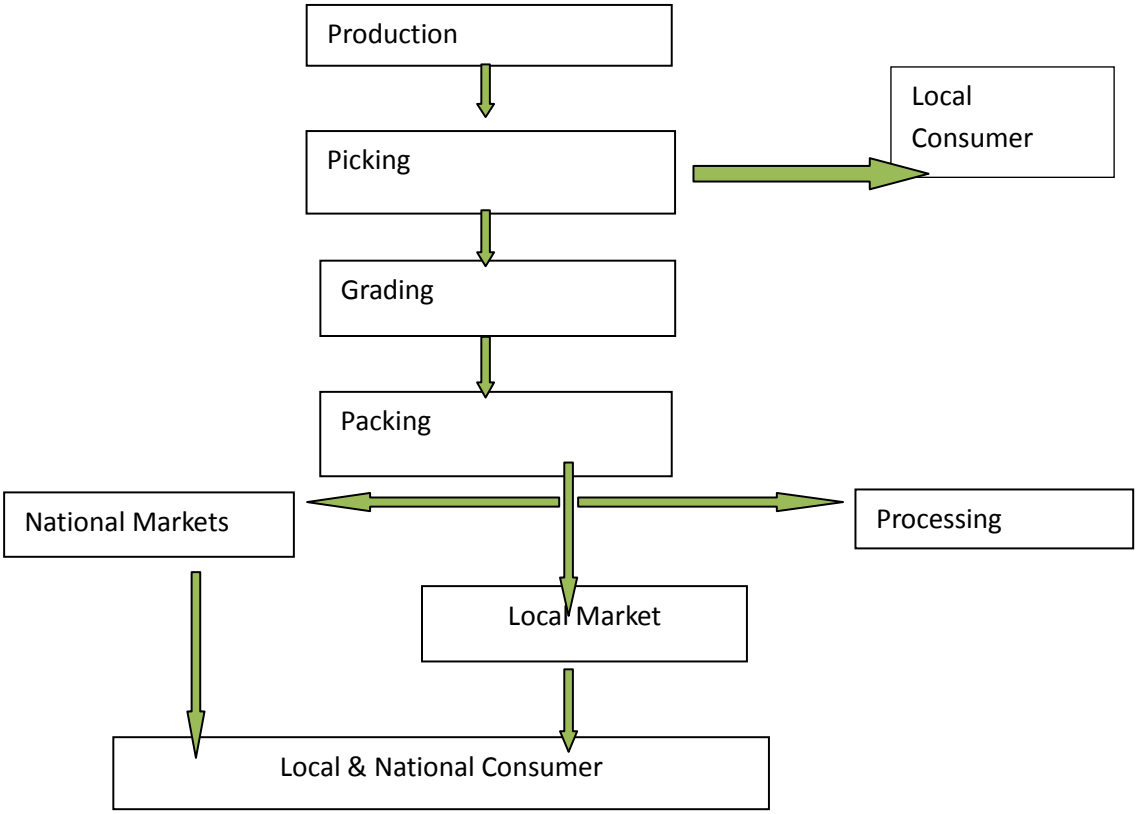
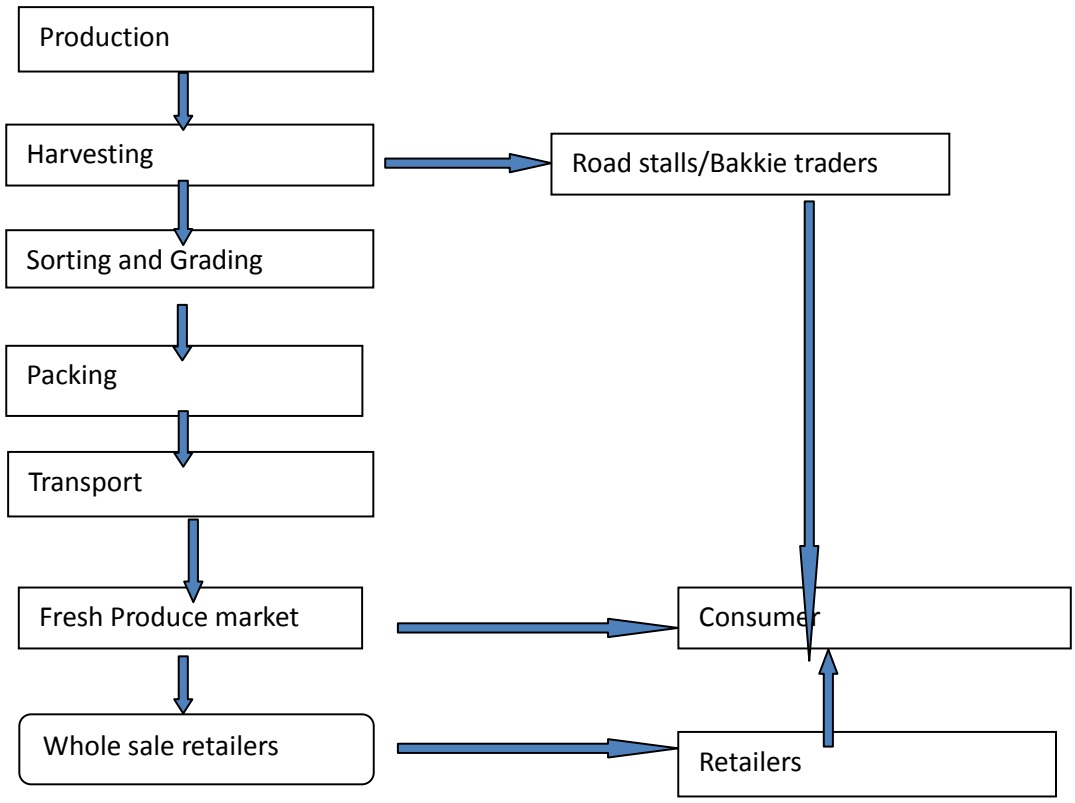


Table 7.1 : Value chain analysis for mango (per ton)

Process	Value R	Cumulative value	Percentage
Pest control	2600	2600	19.8
Fertilizers	769	3369	5.8
Spraying	1731	5100	13.2
Weed control	770	5870	5.8
Picking	1153	7023	8.8
Grading	580	7603	4.4
Packing	1750	9353	13.3
Profit 40%	3741	13094.2	28.57

The value chain analysis for mango indicates that the highest cost in the production process is that of pest control. Packing also takes a significant amount. There is a possibility to reduce these costs by common addressal by semi commercial firms so as to compete with commercial firms at national level.

Figure 7.2 : Cabbage Value Chain



(Give table similar to Mango along with brief analysis)

Figure 7.3 Tomato Value Chain

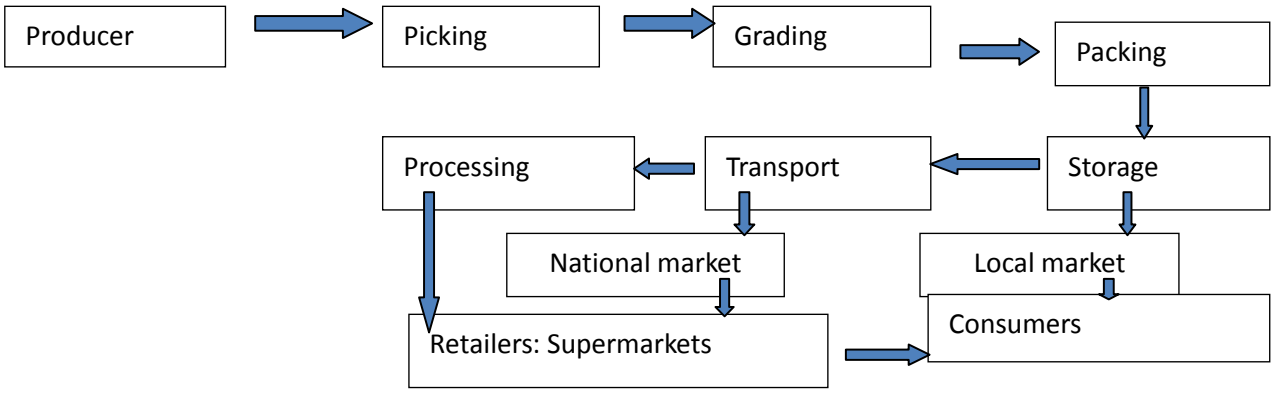
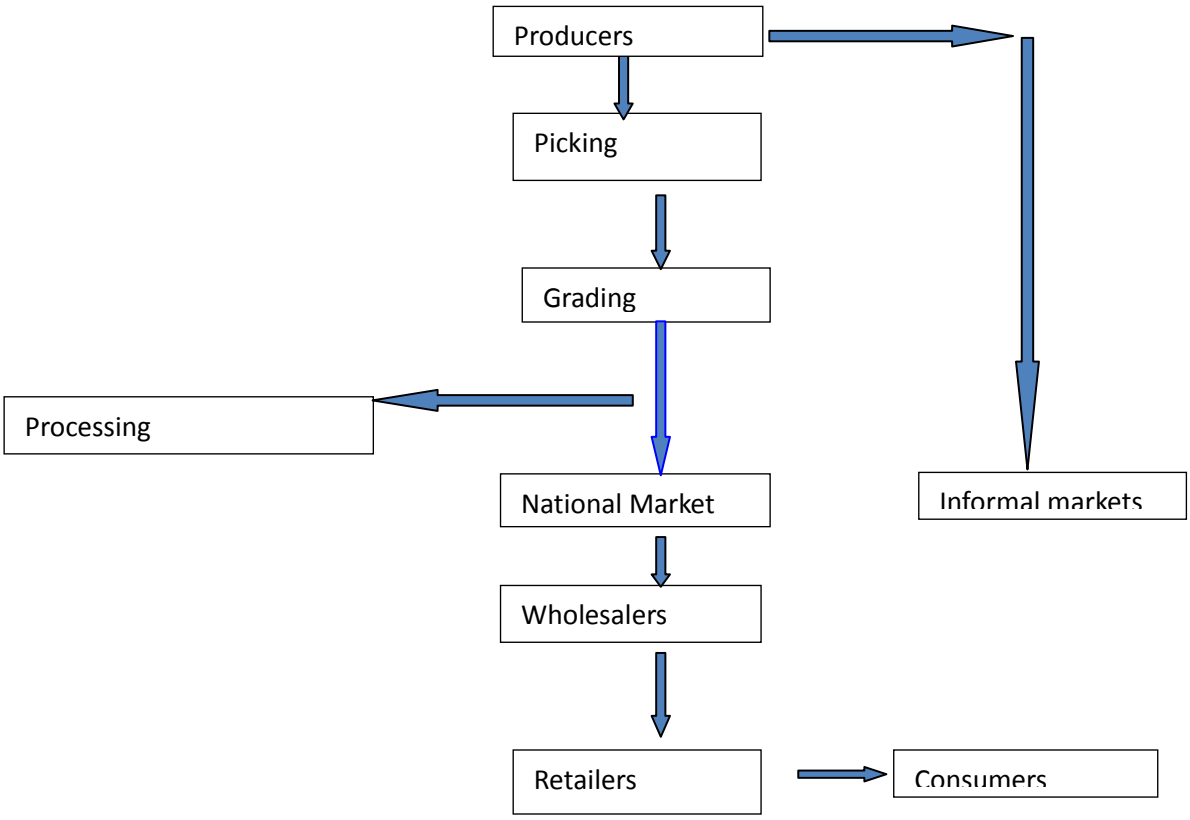


Fig 7.4: Litchi value chain



(Give table similar to Mango along with brief analysis)

CHAPTER - 8

SWOT ANALYSIS

STRENGTHS	*WEAKNESSES*	*OPPORTUNITIES*	*THREATS*
Abundant availability of labor	Most workers are unskilled	Availability of institutions for training of workers	Worker mobility to commercial firms
Cluster situated in an area that is a hub for fruits and vegetables	Uncoordinated activities	High prospects of formation of networks	Competition from other networks and similar clusters
Cluster firms producing similar products	Uncoordinated marketing Shortage of storage facilities	Aggregating produce volumes	Perishability of the produce
Adequate land resources	Under utilization of land Shortage of resources to develop the land	Expansion of cultivable land	
Market for produce available	Lack of market information High Transport costs to markets	Good export market potential	Fluctuating prices at National and international level besides phytosanitary regulations
Availability of Raw material suppliers	Lack of finance to purchase adequate inputs	Prospects of Bulk purchasing by the firms	Rising input costs
Close Proximity to public institutions	Poor interaction with public institutions	Firms willingness to Improve linkages	
Proximity to commodity associations	No interaction with associations	Firms willingness for establishment of linkages	
	Low awareness on weed, pest and frost control techniques Low awareness on mechanized grading and sorting	Presence of Technical Institutions and technology vendors with in the cluster	

CHAPTER – 9

KEY ISSUES OBSERVED IN THE CLUSTER

The major problems confronted in the cluster are listed out below:

9.1 Training

Training is provided sometimes without a proper need assessment and relevancy. Moreover training is mostly provided for the management excluding the farm workers. Training sessions are inadequate. No participation of the cluster firms in formulating training programs.

9.2 Finance

Farmers are unable to provide collateral to the banks for seeking credit leading to poor financial linkages. Moreover farmers are unaware of preparation of business plans thus limits the requests for credit. Lack of awareness on credit products and banking procedures is the major barrier.

9.3 Business development services

The cluster has very little access to business development service providers and there is need for the services like Accounting, Marketing, Quality, Production and general management

9.4 Farmers Union and Commodity Associations

Very little interaction is observed between cluster members and related unions due to lack of trust.

9.5 Marketing issues

There is an acute shortage of marketing information especially for semi commercial firms within the cluster. Inadequate access to the markets because of distance and haulage problems results in increased transaction costs. Uncoordinated and stiff competition from the well resourced commercial farmers also drives small firms out of business.

9.6 Input issues

The absence of backup services for machinery and the ever increasing input costs hinder the smooth flow of the production.

9.7 Post Harvest issues

The shortage of storage facilities, packing houses, the cold chain, poor product grading and presentation are all working against the product quality.

9.8 Knowledge level Issues

There is inadequate product knowledge, poor general management skills, poor communication skills and low knowledge levels of in field production processes. This is coupled by an inadequately skilled labor force.

9.9 Social Dynamics issues

Aging farmers and very few youth involved in agriculture is threatening the sustainability and survival of the cluster. Besides there is worker mobility to nearby better paying commercial farmers.

Summary of needed skills identified in the cluster

- Farm management skills
- General record keeping for employees
- Formulation of business plans
- General financial management and accounting
- On farm maintenance of machinery
- Proper use of chemicals
- Post harvest handling and processing
- Disease scouting
- Soil fertility management
- Marketing skill dynamics

CHAPTER – 10

CLUSTER VISION & STRATEGY

10.1 Cluster Vision

The cluster envisions for an inclusive growth with up-scaling of processing facilities, improved financial linkages, quality control, and increase in the turnover by 30%, production by 40%, employment generation by 20% with establishment of formal networks for raw material procurement and marketing by the year 2014.

10.2 Short term targets

Organising Capacity Building Programmes :

With the help of relevant Government Institutions and BDS providers, Skill Development Programmes for farmers and in better cultivation, pest control techniques, soil fertility management, post harvest handling and processing need to be organized. Similarly for producers and farmers Entrepreneurship Development Programmes, Good Manufacturing Practices will be conducted.

BDSP Linkage:

Linkage of BDSPs in marketing, accounting, technology and quality need to be strengthened through organizing BDSP interface, BDSP Fairs etc. with the help of provincial and Central Government departments.

Financial Linkages

The linkage of cluster firms with banks and Financial Institutions need to be strengthened through organizing regular bankers meets. Awareness workshops with banks and other Government financial bodies on various schemes, loan products need to be conducted so as to facilitate the farmers and producers in availing credits and grants.

Marketing

Organising buyer-seller meets with major retail chains, exposure visit of cluster firms to bigger markets like Johannesburg, formation of network of cluster firms in the form of consortium are some of the tools which can be used to improve the direct marketing. Interface with packing experts will also boost the better packing practices.

Associations/ Networks

Formation of cluster level associations by bringing in farmers and producers of the cluster is very important for long term sustainability of the cluster development interventions. Similarly the linkage with product specific associations needs to be strengthened through frequent interactive meets.

To mitigate the middlemen exploitation to reach national markets and reduce transportation costs a marketing consortium with cluster firms need to formed and capacitated.

10.3 Long term Targets

A common storage facility with the help of Government Support needs to be established. However the feasibility of such facility need to be assessed and need to be considered as long term objective . Infrastructural development will include the following:

- Establishment of backup services like common equipment maintenance unit within the cluster may be considered. This will in the long run reduce the machine down time.
- Establishment of a packing house and cold chain
- Establishment of a cluster governing body (Coordination Committee) for self sustainability

Annexure – 1

TENTATIVE ACTION PLAN OF GREATER TZANEEN FRUITS & VEGETABLE CLUSTER

					Contribution			
SNo	**Activity**	**Time line**	**Implementer/ BDSPs**	**Total Budget**	**Stakeholder**	**Donor**	**Others**	**Expected outcome**
	I. Trust Building							
1	Workshop on Cluster Development (Half Day)	12/2011	SAAA/ CDA	11500	0	11500	0	Created a common understanding among stakeholders
2	Exposure visit to a fresh produce market at Johannesburg (One Day)	01/2012	SAAA, CDA	16000	0	16000	0	Created an understanding of the marketing process and procedure besides building up trust
	II. Capacity Building							
3	Workshop on financial management (2 Days)	02/2012	SAAA/	17700	0	14200	3500	Created an understanding for firms on financial issues and bank products
4	Training on record keeping and stock control (1 Day)	03/2012	SAAA	5750	0	4350	1400	Farm accounting Practices improved

5	Workshop on product grading and presentation (1 Day)	04/2012	SAAA	6250	0	6250	0	Firms Learned grading and packaging practices
6	Training on machinery maintenance (2 Days)	04/2012	SAAA	2650	1300	1350	0	Created awareness on workshop maintenance
7	Workshop on safe use of chemicals (1 Day)	05/2012	Suppliers,SAAA, AFGSA	3650	0	3650	0	Reduced crop loses
8	Learn tour to a commercial farm (1 Day)	06/2012	CDA,SAAA	2000	1000	1000	0	Created a benchmark for cluster members
9	Training on Pest and Disease Management (2 Days)	07/2012	SAAA	8200	0	8200	0	Created awareness on management of pest and diseases
10	Training programme on Post Harvest Handling of produce (1 Day)	08/2012	SAAA	4500	0	4500	0	The handling of the harvested produce understood
11	Workshop of water & soil fertility management (2 Days)	09/2012	SAAA	7200	0	7200	0	Soil & Fertility management understood
12	Presentation on Quality Standards and Certification	10/2012	SAAA	6500	0	6500	0	Created awareness on quality standards and certification

	III. Finance							
13	Organising a Bankers & FIs Meet (1 Day) 3 programmes	11/2012 11/2013 11/2014	CDA,SAAA ,Standard Bank	25000	3000	22000	0	Improved awareness with banks and FIs
	IV. Marketing							
	Organising a one day Buyer – Seller Meets (3 Programmes)	12/2012 10/2013 05/2014	CDA,SAAA	15000	5000	12000	0	Improved direct linkages with the buyers and exporters
14	Workshop on organized marketing	01/2013	BDSP, SAAA	6500	0	6500	0	Awareness on organized marketing leading to consortium formation
15	Interface with packing experts	02/2013	BDSP, SAAA	7500	0	7500	0	Understood different types of packaging

	V. Associations							
16	Interactive meets with commodity associations & national farmers unions(3 Nos)	03/2013 08/2013 02/2014	CDA	3000	1500	1500	0	Improved linkages with commodity associations and national unions
	VI. Infrastructure							
17	Organise consultative meeting for establishment of common facilities for storage, maintenance workshop, packing and cold chain	05/2013	CDA	1000	500	500	0	Decision reached for formation of common facilities
18	Undertake feasibility study based priority	06 to 07/2013	BDSP, SAAA	4000	2000	2000	0	Feasibility Report produced on prioritized common facility
19	Preparation of Business Plan for feasible facilities	08 to 10/2013	BDSP, SAAA	10000	5000	5000	0	Business plan produced and presented for feasible facility

	VII. Others							
20	Establishment of resource centre with cluster website	01 to 3 2014	SAAA	20000	2000	10000	8000	Resource centre along with website established
21	Cluster agent support 1.Mileage and fuels	Continuous for three years	SAAA	108 000				Execution of activities facilitated
22	Purchase of computer and accessories for CDA	12/2011	SAAA	6000				Documentation of project activities facilitated
Total				317000	151700	12900	185900	

Annexure – 2

Details of cluster firms

1) Selwane farmers

The Selwane farmers are a registered proprietary company. They comprise of 6 members. They belong to the National Farmers Union (NAFU) and are neither Global gap nor Fair trade certified. The farm is managed by the members themselves .Their operations commenced in 1999 on a 76ha land they were given permission to occupy by the Ba Phalaborwa municipality. At the present moment their production is centered on mangos 33ha and 10ha vegetables. The 33ha which was under citrus was destroyed by floods. Replanting of the citrus orchard is in progress

Production

Mangos

Variety: Tommy Atkins and Sensation

Average yield 4 tons per hectare

Volumes generated approximately 120 to 130 t

All the produce is destined for the local and national market

Tomatoes

Varieties: Heinz, Florodade and Rodade

Average yield: 30 to 40 tons per hectare

Volumes generated: approximately

All the produce is destined for the local and national market. No export produce

Pepper

Variety: sweet pepper

Average yield: 25 to 30 t /ha

All the produce is channeled to the domestic market. No exports

Labor

The enterprise employs 11 permanent workers plus the members of the enterprise. Seasonal workers are drawn from the nearby Selwane village during specific peak periods. The workers are general employees with no specific skills. No training for workers has been provided.

Farming operations

The basic farm operations include ploughing, weeding, pest control, watering, harvesting ,grading and packaging. The operations are done using basic tractor drawn and hand held implements. Training on basic farm operations is provided by the extension officers from the department of agriculture.

Farming Equipment

The farming equipment is very basic, aged and inadequate. These include a tractor, mould board plough, disc harrow, hand sprays and garden tools. Machinery is sometimes hired from the nearby firms.

Marketing

The products are marketed locally and nationally. Locally the market includes the road stalls, the bakkie retailers, and retail outlets. The national market is the Johannesburg Fresh Produce market and the Tshwane Fresh Produce Market. The farmers use agents to market their produce

Training

Training is provided by the department of Agriculture extension officers and the Agricultural Research Council. The raw material suppliers also carry out some technical demonstrations.

Suppliers of raw materials

Machinery was supplied by ARDC as a grant at the beginning of the project. At the present moment spare parts are procured from Agrico in Tzaneen. Seedlings, seed and fertilizers was acquired through the department of Agriculture and now they bought from NTK in Tzaneen and Polokwane. Agricura in Letsitele supplies pesticides.

The technical support is done by the Department of agriculture as well as support from the suppliers.

The soil analysis is done by the department of agriculture.

Challenges and needs of the Enterprise identified

- **No Financial assistance to recapitalize the farm**: The enterprise is self funded. Training in the formulation of business plans is needed so as to tap into the funds from financial institutions.
- **Machinery is dilapidated and outdated**: Recapitalization is required. Training of internal maintenance personnel is required so to run an internal workshop to reduce machine down time
- **Lack of management skills**: management training required in record keeping, communication, book keeping and basic accounting
- **Inadequate training from Extension services**
- **Chronic shortage of marketing information and skills in market identification:**
- **Lack of knowledge in product presentation:** training in grading and packaging is essential
- **Absence of coordinated activities with other farmers in the areas: links to other product associations have to be established**
- **Logistic issues: transport for the procurement of raw materials and sending of produce to the market is very costly. There is need for a collective approach within the area**
- **Rising inputs costs: Seed, fertilizers, and chemicals are on an upward trend. Bulk and group purchases are needed to distribute the costs**
- **Stiff competition from surrounding firms: Quality and volumes need to be addressed.**
- **Future Plans and development**

1. Establishment of a pack house
2. Establishment of maintenance workshop
3. Establishment of an IT unit with Internet

2) **Moradu Enterprises**

- Moradu enterprises is registered as a Close Corporation run by Jack Moradu
- The enterprise is run on a leased piece of land at Bush Valley farm. It is Globalgap certified. The operations started in 2006. The area under crop is 12 .38 hectares. Pumpkins occupy 5 ha, pepperdew 5ha and mangos 2.38ha.

Production

Pumpkins

Average yield: 18 t/ha

Volume output: 80-90 t

All the produce is for the domestic market. No export

Pepper dew

Average yield: 40 tons per hectare

Volume output: 200 tons

The pepper dew is produced under a contract from Pepper dew International Nkowankowa.

Mangos

Average yield: 5 t per hectare

Volume output: 12 tons

The produce is destined for the national market

Labor

The enterprise employs 4 permanent employees. All the employees unskilled but have experience in farming. Seasonal workers are only hired during peak periods. The labor force is drawn from the nearby villages and firms.

Farming operations

The operations are done professionally. Machinery is mostly hired from the commercial farmers for operations such as tillage and pest control.

Farm equipment

Farming equipment is very basic and old. This includes spraying equipment and ploughs.

Marketing

Marketing is mostly national. A contract was established with Pepper dew international for the pepper dew

Training

Training is done by Extension officers from the Department of Agriculture. Raw material suppliers also periodically provide technical information. Other trainers involved are SA Agri Academy and ARDC

Suppliers of raw materials

Tractors and the accessories are procured from Landini in Tzaneen. Other input such as seedlings are sourced from Hygro tech. Provento supplies fertilizers and pesticides. The raw materials together with department of agriculture provide the technical backstopping. The soil analysis is done by the department of agriculture.

Challenges faced by the enterprise

- Finance to purchase equipment
- Lack of Marketing information and market destinations
- Capacity to sustain a market

Future Plans and developments

- Acquisition of an 87 ha farm through the Department of Rural Development and Land Reform
- Expand the area to 20 ha

3) **Coleson Business Enterprise**

Coleson Business Enterprise is a registered Close Corporation run by Mr. Piet Ramoshaba. The farmer does not belong to any Farmers organization. The farming activity is done on 10 ha plot which he was given permission to occupy by the Ba Phalaborwa municipality. The operations started in 2002. Green pepper, tomatoes and butternut are crops that are grown. The farm is neither Global gap nor fair-trade certified.

Production

Green pepper 3ha

Average yield 30t/ha

Generated output: approximately 90 t

Tomatoes 3ha

Varieties: Florodade, Heinz

Average yield: 45 to 50t /ha

Generated output: approximately 90 tons

Butternut 4ha

Average yield: 15 to 18 t/ha

Generated output: approximately 45t

Labor

The enterprise employs 10 people all permanent. Seasonal are employed during peak periods when the staff cannot cope with the amount of work. The staff are all unskilled but experienced in farming operations. They are all drawn from nearby Selwane village.

Farming operations

The operations are done using both hand and machinery. They include planting, weeding, pest control, pruning, training of plants, harvesting and grading.

Farming equipment

Most of the equipment needs replacement. They include the tractor which is very old. The pumping station is malfunctioning hence a replacement is imminent

Marketing

The produce is all sent to the domestic market. Market destinations are the Johannesburg and Pretoria Fresh Produce Markets as well as the local retail shops, road stalls and bakkie retailers

Training

Training done by Extension Officers from DAFF. Some technical backstopping is done by the input suppliers.

Finance

No funding from any institution. Self financed

Raw materials and Machinery

The materials are sourced from Agrico, Ocean Agriculture, fedmis and other smaller retailers in Tzaneen and Phalaborwa. Fertilizers and pesticides are procured from NTK in Tzaneen. Soil analysis was done by the department of agriculture.

Challenges met by the enterprise

- Transport to the market
- Inadequate market information
- Inadequate training
- Unreliable marketing agents
- Lack of finance to recapitalize the farm
- Rising input costs

Future Plans and development

- Expansion of the area to 20 hectares
- Target export market
- Contract farming

4) Tia Farming and nursery

Tia Farming and nursery is a Close Corporation which started its operations in 2009. It is managed by Refilwe Maloba. The initiation stage of the enterprise was sponsored by the government. Farming is taking place on 33ha hectare plot. The crops grown are Mangos 20ha, Litchis 5ha, Vegetables 6ha and nursery 2 ha. The enterprise is neither Global gap nor Fairtrade certified.

Production

	Mangos	litchi	Vegetables cabbages
Variety	Tommy Atkins	Mauritius	Drumhead
Yield	3t/ha	1t/ha	30t/ha
Output	40t	4t	30t

Labour

The enterprise employs 6 permanent staff. These are complimented by the seasonal employees. The workers have no training and most are foreign nationals.

Farming Operations

The farming operations include ploughing, planting, weeding ,pest control , harvesting, grading and storing. They are done using both machinery and hand held implements.

Farming equipment

The farmer possesses some basic farm implements such as spraying equipment, ploughs, tractor and a bakkie. Some of the machinery for specific activities is hired from the neighbours. The equipment is still in working order but aging.

Marketing

The mangos are sent to the local achar factory. Vegetables are absorbed by local retailers Spar and Boxer Supermarkets. The local informal market also plays a role in taking some of the vegetables. Most of the nursery plants are sent to the municipal market.

Raw materials suppliers

The suppliers of raw materials are Martin dale for seedlings, NTK for fertilizers and pesticides. These are sourced from Tzaneen. The soil tests were done by the department of agriculture. Technical backstopping is provided by both the department of agriculture and input suppliers.

Training

There has been no formal training for the farmer and her workers.

Finance

The seed finance was from the bank and no other finance from any institutions.

Challenges

- Lack of finance
- No market information
- Rising input and electricity costs
- No training
- Vermin problems

Future Plans

- Establishment of a poultry project
- Establishment of a 10 ha hydroponic project

5) Davano Fresh Produce

Davano Fresh Produce was established in 2004 by the Mlondoboza family. The farm is leased from the Tribal Authority. The enterprise is managed by Mr. and Mrs. Mlobondoza. It covers an area of 50 hectares. The crops grown are jam tomatoes 11ha , pepper dew 5ha, butternut 1ha, and okra 4ha. The enterprise is not Global gap certified.

Production

Jam tomatoes

Average yield: 30t/ha

Expected output: 300t

Pepper dew

Yield: 30 to 35 t/ha

Expected output: 150 t

Butternut

Yield: 15 to 18 t

Expected output: 15t

Okra

Yield : 4 to 6 t/ha

Generated output: approximately 16tons

Labor

The enterprise employs 5 permanent members of staff. Seasonal workers are drawn from the surrounding villages. They can number up to 24 at a given peak period. The workers have no formal training in agriculture. They all use gained experience

Farming operations

The farming operations include planting, weeding, pest control, plant training, grading, packing and storing.

Farming equipment

The farm has no tractor hence the ploughing and discing is outsourced. Other equipment includes hand held implements. There is a critical shortage of implements.

Marketing

The fresh produce is sent to the national markets where it is sold through agents. The markets are Johannesburg Fresh produce market, Tshwane fresh Produce market and Springs. Locally the produce is sold to Spar in Giyani.

Training

No training is received from government extension officers. Information is acquired through the Internet.

Finance

The seed finance was from a bank loan. Currently there is no financial support

Raw materials

Raw materials are sourced from Tzaneen and Phalaborwa. These include seed, chemicals and fertilizers. Seedlings are procured from neighboring commercial farmers. Supplier of seed is Agrobtech, pesticides is Avello, fertilizers is Bio Trust and spares from NTK. Technical

advisers are the department of agriculture and input suppliers. The soil analysis was done by a private company and the department of agriculture.

Challenges faced by the enterprise

- Inadequate product knowledge
- Inadequate market information e g export market
- Lack of capital