



Horticulture Marketing Extension

Introduction

This paper reviews activities which extension workers can undertake to improve marketing of horticultural products by emerging farmers. It looks at how to assess the capabilities of farmers, how to research the market and identify moneymaking possibilities. It describes what extension officers can do to assist their farmers, how they can gather information and carry out market research. The paper also reviews basic post-harvest handling techniques.¹

The research phase

Researching involves both understanding **your farmers and their potential market**. Much information about the latter is available in Paper No. 3 of the series, "The South African Horticultural Market."

The local resource audit

The resource audit is an important stage in finding out the strengths and weaknesses of your area. This includes:

- what are the major crops grown, when are they harvested and any particular characteristics of the product,
- the scale, skill and problems of the farmers in the area,
- the businesses who transport, store, process and pack agricultural products,
- the levels of existing trade and the possibility of its expansion,
- the leaders in the farming community,
- the assistance that farmers require to help them market their products.

Table 1 summarises two **resource audit** surveys carried out in South Africa of emerging/new farmers and their problems.

Small-scale farmers' problems

Small-scale vegetable farmers in South Africa have identified their problems as:

- insufficient market places,
- lack of transport,
- poor market infrastructure e.g. large numbers of small-scale producers are a long distance from the major Fresh Produce Markets,
- poor infrastructure e.g. roads in certain regions,
- a lack of market information and not being able to interpret the data when it is available (and therefore to judge which crops to grow and reasonableness of prices being offered),
- lack of credit facilities.

¹ Extension officers interested in going into more detail on this topic should request a copy of FAO's publication "Horticultural Marketing," AGS Bulletin No. 76 from the Marketing and Rural Finance Service of FAO, Viale delle Terme di Caracalla, 00100, Rome, ITALY.

Table 1: Results of a resource audit in two provinces

	Eastern Free State	Northern Province
Allocation of land	37 % by Chief, 27 % municipal property, 10 % rented, 9 % owned.	Not available.
Size of holding	33 % less than 1 ha, 28 % 1-10 ha.	52 % less than 1 ha, 27 % 1-10 ha.
Type of enterprises	42 % vegetables, 35 % beef, 30 % dairy, 25 % chickens.	87 % vegetables, 25 % maize, 28 % beef, 11 % poultry, 11 % fruit.
Vegetable farmers		
Major crops	Cabbage 50 %, beetroot 50 %, spinach 40 %, carrots 37 %, potatoes 30 %.	Tomatoes 77 %, cabbage 70 %, onions 40 %, spinach 27 %.
Marketing channels	Private individuals 64 %, open market 17 %, small shops 8 %, hawkers 6 %, institutions 6 %.	Hawkers 35 %, private individuals 28 %, open markets 26 %, small shops 11 %.
Transport	Not used 47 %, foot 19 %, own car/bakkie 16 %, taxi 9 %, hired bakkies/truck 9 %.	Hired transport 40 %, not used 28 %, own transport 32 %.
Sales/promotion techniques	Word of mouth 62 %, take produce to buyer 28 %, display 7 %, chance 3 %.	Display 46 %, word of mouth 39 %, take produce to buyer 12 %, chance 3 %.
Pricing	Same as market 24 %, extension advice 20 %, shop price 18 %, own price 18 %, same as other growers 7 %, same as hawkers 7 %.	Own price 38 %, same as market 22 %, same as other growers 20 %, take price offered 14 %, extension officer 6 %.
Value added	Wash vegetables 63 %, package 23 %, peel 6 %, cut 6 %.	Wash and trim 56 %, package 44 %.
Distance to markets	Less than 1 km, 21 %, 1-5 km, 33 %, 6-30 km, 25 %.	Less than 1 km, 22 %, 1-5 km, 8 %, 6-30 km, 33 %, over 30 km, 37 %.
Intimidation in market.	Demand credit 30 %, steal 25 %, refuse to pay back credit 18 %.	Not available.
Farmers' proposals for improving vegetable marketing.	<ul style="list-style-type: none"> • Build new market places (50 %). • Sell direct to supermarkets. • Cash sales only. • Storage and transport. • Sell in other towns, in open markets, to hawkers. 	<ul style="list-style-type: none"> • Build new market places (90 %). • Sell at major markets. • Contract sales to supermarkets. • Improved prices. • Advertise. • Black agents at major markets.
Farmers' proposals for government assistance	<ul style="list-style-type: none"> • Encourage cooperation between black and white farmers to supply white consumers. • Build farm stalls in towns. • Assist in transport to major markets. • Improve roads. • Financial assistance to start small businesses. • Assist in links with major buyers, advertising products and market research. • Simplifying tenders to supply hospitals and schools. 	<ul style="list-style-type: none"> • Transport subsidies. • Market information. • Financial assistance. • Identifying marketing outlets. • Tenders to supply hospitals, schools, etc. • Provision of packhouses and stores. • Improve roads.

Often, farmers' suggestions as to government assistance are unrealistic. Investments in roads are very expensive. Government financial support for transport cannot be sustained for any period of time, because of the costs to the taxpayer. Most provincial governments are short of funds and much as they would like to help, expensive projects cannot be considered. They are much more likely to be supportive of less expensive, well-targeted investments for which a well-argued case is presented by a large group of farmers and when the private sector is committed to being involved. (See Annexure B for an example of a questionnaire used for conducting a resource audit and farmer survey.)

National overview

Currently there is little information on the number and location of new/emerging farmers. In August/September 2000 the government carried out a survey of the emerging farming sector, but the results will not be available until late 2001. What is certain is that there are many more African farms (maybe as many as 870 000) than white commercial farms (about 40 000 and falling). Amongst this large number there are, currently, only a small proportion that are commercial, or semi-commercial. One estimate put this figure at 10 %. The surveys suggest that vegetable production is the most popular enterprise of emerging African farmers. Fruit production, probably because of the higher investment costs and longer lead times into production, is found in smaller numbers in specific production areas.

Market research

Market research is divided into two actions: firstly finding out about **how the market works** and secondly, finding out **what products the market demands**.

Finding out about how the market works

- The **channels** through which products pass.
- Who is the **important players** on the market.
- **How they do their business**.
- Their **interest in trading** with your farmers.
- **Who do they sell to**.

Finding out what products the market demands

- **Product** specifications, colour, size, grade, quality, packing.
- **Prices**, price pattern, variance according to season, quality and supply.
- **Supply**, volumes, competing suppliers, seasonably.
- **Preferences** of customers and consumers.

(See Annexure B for an example of a questionnaire with which to carry out market research.)

Note

Research involves both understanding your farmers and their potential market.



Farmers can not assume that they can make a profit from one crop only. The extension officer can assist in finding out what products the market demands.

Decision making and developing strategies

Understanding the small farmer sector

In helping a grower or a group of growers to decide what would be their best marketing strategy, we need to clearly understand what are their **Strengths, Weaknesses, Opportunities and Threats**. This is called a **SWOT analysis** and is helpful in setting out an unprejudiced view of what are the advantages that can be maximised and what are the disadvantages that need to be overcome.

Table 2: Small-scale farmer SWOT analysis. (Strengths, weakness, opportunities and threats)

<p>Strengths</p> <ul style="list-style-type: none"> • Through the use of family members as labourers, labour costs are lower. • Can intensively look after a crop as it is grown on a small area. • Have a better insight into consumer preferences of the informal African sector. 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Need to generate a high income from a small area to be financially viable. • Low levels of knowledge, expertise and experience in horticultural production and marketing. • Weakness in market knowledge and negotiation. • Need income stability, but produce prices fluctuate. • High unit transport costs for small volumes of produce into market. • Lack of accessible and nearby markets. • No access to finance. • Poor quality land. • Little experience of farm, financial and market management.
<p>Opportunities</p> <ul style="list-style-type: none"> • If located near towns (e.g. peri-urban) concentrate on perishable crops (e.g. marog, spinach) • Specialise in labour intensive crops (e.g. transplanted, hand harvested, etc.). • Target products on the informal sector. • Exploit opportunities to supply Government food contracts. • Improve quality and quantity to supply formal marketing channels. • Farmers and agribusinesses are under political pressure to work with new, small-scale farming sector. • Possibilities for range of other rurally based enterprises to increase income, e.g. added value, contract labour services. • Government schemes to provide improved grants to support farmers in land purchase (individual and jointly owned farms) coupled with international aid schemes to lower interest rates on some loans. 	<p>Threats</p> <ul style="list-style-type: none"> • The financial pressures on the agricultural sector as a whole (established commercial farms going bankrupt). • Additional supplies from new farmers may lead to oversupply and falling of prices. • Rising costs of inputs. • Weak economy.

Note

Strengths are *internal factors* to your business or product and can be the product itself, a specific person, expertise, geographic positioning, contracts, etc. Strengths are your marketing message as in an advertisement.

Weaknesses are *internal factors* to your business or product and can cause negative reactions within, it may even be the lack of strengths. They are not life-threatening to a business. From these weaknesses **make a list of systems and procedures you need to implement** to strengthen them.

Opportunities are *external factors* to your business or product with regard to the marketplace and competitors. E.g. a new market opportunity, re-packaging your product, adding value or a new product to create a new market.

Threats are *external factors* to your business or product with regard to the marketplace and competitors. They are life-threatening to a business and not mere weaknesses. **Make a list of training and developmental needs for your employees**. This will also become individuals' goals in their own performance reviews.

Table 3 sets out some different examples of how farmers might create business opportunities in the rural areas. This is not an exhaustive list, but indicates many of the different strategies available.

Table 3: Strategies for the horticultural grower

Market	Opportunity	Weakness
Sell to neighbours.	This is how most farmers start their business. Professional growers must be able to deliver a product that amateur gardeners cannot supply, e.g. out-of-season produce or the more difficult crops to grow.	The market is easily saturated.
Sell to local market.	This is the next stage in commercialisation of a farm. Taking produce to a local market, normally a small town where there are wage earners needing to buy fresh produce.	The market is easily saturated.
Supply to processor.	Prices will be low, but a processor is dependent on his source of raw material and so the market is more reliable. Mutually beneficial arrangements can be established in isolated irrigation schemes, especially with labour intensive crops. Some processors will provide inputs and technical support to ensure yield and quality required.	Farmers may be tempted to renege on contract to sell into higher priced local markets. Processors may not provide the required support, lose the market and stop buying.
Supply to visiting hawkers/bakkie traders.	Necessary to provide bakkie traders with their needs for a range of produce, sufficient volumes to fill transport and rapid turn-round times. Suitable for irrigation schemes with reasonable access to markets or locations where there is a high density of vegetable farmers growing a range of crops. (Cellphone or telephone connections help considerably. It may be necessary to establish a rural assembly market to attract a large number of buyers.	Care needed to start trade, with growers having to commit themselves to increased production to attract hawkers, without any assurance that the hawkers will actually visit and purchase. If competition between traders is low, very low prices will be offered, if the market is oversupplied traders will not arrive.
Supply National Fresh Produce Market.	Growers must be able to pay for packaging materials and transport. Product must be graded in terms of size, quality and colour. Transport to market a key issue requiring that a transport company is available, the grower can deliver to the traders' warehouse or if there is sufficient volume and organisation then product can be collected from a number of different farms.	A higher level of commercial and marketing skills is required. Agents need to be chosen, prices checked, distribution organised, and produce needs to be graded, packed and presented well. Crops chosen that the market demands.
Intensifying market orientated production.	Small farms need high value crops and products to be economically viable. This can involve changing the cropping mix to higher income crops, introducing technology, e.g. hydroponics or protected cropping to increase output.	Most of these increases in output will require increased capital investment.
Peri-urban horticultural production.	Growers on the outskirts (or very near) to townships. Potential comparative advantage is the ability to produce extremely fresh products, so should concentrate on the most perishable products. Product is either taken to market, or if strongly demanded hawkers or bakkie traders will collect from the farm, sometimes even harvesting the crop.	Theft and security can be a serious constraint.

Table 3: Strategies for the horticultural grower (continuation)

Market	Opportunity	Weakness
Supply government contract.	Situations exist where local hospitals are supplied with produce which was grown at a distant place while the local growers have no market. Growers need to be organised to be able to deliver on a 'Tender Supply Contract'. But small-scale farmers are given preference in tendering (e.g. their bid price can be above other suppliers by a few % points). It may be possible to construct a bid in conjunction with one of the companies who specialise in supplying these contracts.	Committing to supply a government contract to deliver food requires careful production planning to ensure continuity of supply and the correct volumes. If product cannot be supplied from local farms then a fallback position is required so that produce can be bought-in from NFPMs to make up shortfalls.
Growing products for fresh produce export.	Internationally only the top few percent of growers have the growing conditions, management skills and equipment to be able to supply this market. This will only suit individual growers who are already highly successful. The other solution is a joint-venture scheme between a farmer/manager/entrepreneur and the farm workers, often supported by long-term finance.	Profitable farming sectors must be chosen, often with a value-added and/or technology component. The entrepreneur or manager must be chosen carefully and be committed to developing the management skills of his workforce. They need to be properly informed and orientated as to how the business is now organised and the divisions between the role of manger and workforce. The entrepreneur/manager should have about 10 to 20 % share holding and removable in the event of under-performance. Loans should not exceed 20%.
Contract farming.	Where a small-scale farmer or a group of small farmers grow specific products for a neighbouring commercial farmer under contract thus adding to the volume and range of his products.	Not yet observed in South Africa.
Other rural-based enterprises capable of supplying additional income for a small-scale farmer		
Contract labour services.	Many commercial farmers are trying to cut down on permanent staff on their farms. For labour-intensive farming operations such as planting, fencing, pruning, harvesting and packing they are turning to contractors supplying gangs of skilled and semiskilled farm labour.	No land ownership involved. Requirement: transport and telephone.
Processing, value-added activities.	Urban Africans are demanding convenience foods, often African niche products using indigenous foods. This creates opportunities for value-added enterprises using sun drying, solar drying (e.g. dried marog, dried & powdered lerotse), bottling (e.g. achar and chutneys), palm wines (with additional shelf life) and boiled bambara groundnuts.	Training and investment needed.
Marketing outlets in townships.	The provision of basic marketing facilities (i.e. a structure with a roof, good ventilation, selling tables and, possibly, lock up facilities) where farmers, small-scale processors and hawkers can sell their product direct. The added value in the market chain could be circulated through the African economy in this way. It provides market outlets which are accessible to emerging farmers and entrepreneurs. By the supply of fresh, low cost food health standards will rise.	Requires investment by local authorities, which is slow and difficult to mobilise.

Marketing strategies of emerging farmers in the horticultural field

Case studies on how emerging farmers have developed their businesses through market linkages can be studied in Annex A.

Marketing initiatives for extension officers and the provincial departments of agriculture

Provide farmer training

Training is best carried out in a group. Topics can include:

- **Understanding and using market information**
For example NFPM prices are the typical price that the product is sold at. It is not the price that the farmer gets. Commission of 12,5 % has to be deducted, as must the price of transport. The prices given represent a range of selling prices. Your farmers' product may get a different price for a number of different reasons, such as packaging, quality, type of buyer etc.
- **Visiting the National Fresh Produce Market**
Taking a group of vegetable farmers to a NFPM can be a transforming experience for new farmers, giving them an insight into the quality expected in the market, the competition, the volumes traded, how the market operates, how prices can be checked, payment times and transport linkages. It should also give them an opportunity to make their own trade contacts.
- **Farmer talks**
Talks by successful role-model farmers. They should explain how they developed their businesses, what were the problems they encountered, how they overcame them, who they traded with, how they did their marketing.
- **Trader talks**
This is an opportunity for a trader who wants to do business in the area to explain what crops he needs, how he plans to do business, how the product needs to be packed and graded.
- **Post-harvest handling**
This course will need to cover how to maximise shelf life, including keeping the crop pest and disease free so that it is undamaged, harvesting when the crop is cool, harvesting to minimise damage, keeping produce out of the sun and in shade, packaging that protects and promotes, storage and transport.

Processing and added value training and demonstration courses

The *ARC-Fruit and Wine Research Institute* can give training courses in:

- **Fruit processing**
Hygiene, sun-drying, jam, canning, value added to lower quality fruit. Sun-drying of fruit: hygiene, drying yard, drying-tray manufacturing, preparation, sulphuring and storage.
- **Clingstone peaches processing**
Hygiene, drying-tray manufacturing, sun drying techniques, chemical peeling, manufacturing of jam, chutney, rolls, candies and achar.
- **Fig processing**
Hygiene, sun drying, manufacturing of jams, rolls and candies.
- **Value adding to dried fruit**
Quality, fruit leathers, chutney, achar and candies.
- **Apricot processing**
Hygiene, sun drying, manufacturing of jams, rolls and candies.
- **Jam processing**
Hygiene, sterilisation, cooking and spoilage.
- **Post-harvest handling of fresh fruit**

The **CSIR** under its **Technology for Development Programme** can give training and demonstration programmes in:

- **Solar drying**
- **Sun drying**
- **Bottling:** especially achar (fruit and vegetables), chutneys.
- **Bakery:** especially in niche bakery products such as millet bread, sorghum bread and sour bread.
- **Indigenous food products:** e.g. mopani worms and dried leotse.
- **Palm wine production:** especially with improved shelf life.

The **CSIR**, in its **Pilot Plant**, can show entrepreneurs and potential processors the alternative technology available, enable them to try out the equipment themselves, identify sources of equipment and indicate capacities, so that they can plan their own investments.

RUTECH the Micro Enterprise Development Corporation have identified 43 potential rural business opportunities including; small-scale crop production, mass/amasi sour milk production, chicken and egg production, maize milling, beer brewing, bread making, micro-bakery, juice bottling. They train entrepreneurs on how to establish a business, they supply the equipment and can help to provide raw material.

Acting as a catalyst in setting up marketing initiatives and deals

- **Inviting traders/hawkers to meet with farmer group**
So that possibilities of doing business can be explored.
- **Creating linkages between a group of growers and processors**
This will involve establishing the raw material needs of the processor and likely prices, establishing that the farmer group is committed to working with the processor and facilitating both groups to come up with a deal covering production planning, technical and input support, prices and quality standards, delivery and payment terms. The extension officer can assist in the monitoring of the planting, production and payment process and can act as an honest broker in the event of a dispute.
- **Assisting farmers to form a group to overcome a specific problem**
This might involve organising a group so that they can collectively bring in a truck to transport produce to market, thereby reducing unit transport costs. Another possibility would be to encourage local government to establish an Assembly Market or a Farmers' market in the local towns.
- **Providing Information and negotiating support to farmers and farmer groups**
Farmers can be assisted by providing them with names and contacts for important businesses such as suppliers of packaging, transport companies, market agents and traders, processing companies. The extension officer can guide farmers on typical prices for packaging, comparative transport costs, agents with good reputations etc. This information can be gathered in the market research phase.
- **Assisting farm workers to buy a shareholding of their farm**
A number of organisations are keen to support farm workers in their ambitions to buy a major share in their farms in particular Department of Land Affairs' new Integrated Programme (see Agricultural Marketing Extension Paper No. 1). The extension officer can help by advising them on the organisations that can help. The most common situation is where either the existing farmer wants to sell a portion of his farm (often to release funds to carry out a farm development programme), or the farm is up for sale. Grants of R15 000 per farm worker were previously available to fund the farm purchase. Under new legalisation this will be lifted substantially to between R20 000 and R100 000 depending on the level of contribution by the beneficiaries.

Own contribution	Grant	Total	Own contribution	Grant	Total
R5 000	R20 000	R25 000	R60 000	R49 819	R109 819
R10 000	R25 789	R35 798	R100 000	R60 100	R160 100
R40 000	R42 926	R82 926	R400 000	R100 000	R500 000

Most funding institutions suggest the most efficient ratio will be a grant of R50 000 and a loan of R50 000 a total capital of R100 000 per farmer. The contribution can take the form of cash, borrowed capital or a combination of both.

The grants can be used in Equity schemes (e.g. for an employee and co-owner of a farm, whereby the funds are pooled) or for experienced farming applicants to purchase and establish a commercial farm. To qualifying the farmers have to be Black, Coloured or Indian and live near the land they wish to purchase.

Possible organisations to approach are:

- **NuFarmers Development Company Ltd.**

NuFarmers are a Venture Capital Company and private equity investor in agribusiness in South Africa. They have mainly invested in high value export- orientated farms. Farm workers typically own between 3,5 and 20 % of the restructured farm, the rest divided between NuFarmers and the operating partner (the management). Loans rarely amount to over 20 % of the cost of the farm.

- **Khula Enterprise Finance Ltd.**

Has Mortgage Loan Projects, where the purchase of the land must not exceed R600 000 per disadvantaged buyer, with a loan rate at 1 % below inter bank rate. Equity Share projects must not exceed R400 000 per disadvantaged buyer. The third part investor should not own more than 50 % of the equity of the farm/ operating company. The loan interest rate is between 2 and 3 % below the Interbank agreed rate.

- **The Industrial Development Corporations (IDC)**

Will also shortly be in a position to finance such projects with cheaper loan money, possibly with an interest rate as low as 5 %, but this is only for projects with a committed managing partner/entrepreneur that are commercial, e.g. have suitable equity schemes

- Amongst other organisations interested in supporting farm workers' participation in farm ownership are **Capespan Trust** and the **WineTrust**.

All these organisations are only interested in businesses that are well structured, are likely to be financially viable and have a clear division between ownership and management.

- **Assisting emerging farmers, either individually or as a group, to form a partnership between themselves and a Commercial Farmer/Entrepreneur.**

This could involve an arrangement whereby their product is packed and marketed through the entrepreneur's packhouse, or they are contracted to grow crops on his behalf.

- **Creating linkages with aid funded projects to support marketing by small and emerging farmers.**

AfriCare is working with farmer groups to support production orientated production and are able to work nationally.

- The US Aid funded **ArgiLink Project** is currently working in Eastern Cape to create marketing linkages between emerging farmers and the agribusiness sector. They provide financial services to assist entrepreneur's source funding and business training and are drawing up a database of all the important players in the agricultural sector.

The project contractor is a company called Enterprise Management & Innovation (EMI). The project will be expanded to cover Northern Cape and KwaZulu-Natal in October 2001.

An introduction to post-harvest handling

Post-harvest handling requires extensive study to be fully understood. In the space available we will only cover some basic principles. Use the FAO book *'Prevention of Post Harvest Food Losses: fruit, vegetables and root crops'*² for more detailed information. **The main focus in this paper is on extending the shelf life of products.**

Production influences on shelf life

Quality and long shelf life starts with production. Factors that influence shelf life:

- **Water**

Too much leads to soft growth and easily damaged produce.

Too little leads to small sizes and low juice levels.

Dry followed by wet spells can lead to splits or cracks.

- **Fertiliser**

Incorrect nutrition leads to physiological damage and short shelf life.

- **Pest and diseases**

Damage rapidly shortens shelf life.

Note



In an oversupplied market fresh high quality produce will always sell first.

² FAO Training Series No. 17/2, Rome 1989

Major causes of crop losses

- **Water loss**

Plants consists of 65-85 % water. Once harvested there is no replacement of water loss. The larger the surface area, i.e. leafy vegetables, the greater the potential water loss. When 5 to 10 % is lost the product visually wilts and is unusable.

- **Mechanical damage**

At harvesting, through bad handling. Skin breaks, crushing and bruising all lead to physiological damage and disease infection.

- **Physiological damage**

When a harvested plant, or part of a plant, is wilted, damaged or attacked by a disease or pest then chemical reactions can occur within the plant tissue which can cause unpalatable flavours. Plant material rapidly ages without fresh water and foods from photosynthesis.

- **Disease damage**

Damage, whether from bad handling or pest attack increases the likelihood of attack from a disease, as does moisture on the surface of the produce which can lead to fungus development.

- **High temperatures**

The higher the temperature, the greater the moisture loss, the speedier will be the disease infection and the shorter will be the shelf life.

Primary techniques for reducing crop damage and extending shelf life

- **Reduce water loss**

Harvest crops when well watered, hold in high humidity, reduce air flow, keep produce cool. The curing of some products (e.g. drying the neck and outer skin of onions, allowing potatoes and yams to develop a thicker skin under warm humid conditions) reduces moisture loss.

- **Don't damage**

Cut don't pull, hold in the palm not with the fingers, don't drop, be gentle and always handle with care.

Pack in boxes without sharp edges.

Use shallow boxes.

Ensure that there is no excessive weight of produce on top of another produce.

Make sure that the fruit does not stick out above the top of the box and get crushed.

Boxes can collapse or become weakened if too many are stacked on top of each other. (E.g. wet cardboard boxes.)

Drive carefully on poor roads.

Use cushioning for valuable crops (e.g. trays, paper etc.).

- **Minimise physiological damage**

Keep produce cool, turgid and undamaged.

- **Minimise diseases**

Discard diseased and damaged fruit, if necessary treat with fungicide, avoid damage, allow sufficient airflow to prevent moisture collecting on the surface of the fruit and vegetables. Keep field boxes clean and do not let produce touch the ground.

- **Above all keep the produce cool**

Harvest when the product is cool, i.e. in the early morning. In the field protect the produce from the sun with a damp cloth. Remove from the sun as soon as possible, store under shade.

- **When not using refrigeration**

Hold in a cool, dark, humid location. (NB. ARC is developing cool stores that is cooled by the evaporation of water and is only suitable for use in dry climates.)

- **When refrigerating**

Remove the field heat as quickly as possible and reduce to storage temperature. (NB. Every hour that cooling is delayed reduces the maximum shelf life by 10 hours.) If produce is refrigerated it MUST be kept in a cool chain until the point of sale or else moisture will develop on the surface of the produce. (See Disease damage.)



Note

Quality and long shelf life starts with production.

Harvesting

- Avoid mechanical damage to produce at all times. Keep produce clean, out of the sun and avoid contact with the soil.
- Harvest when produce is cool and not wet (e.g. from dew, rain or irrigation).
- Root crops have less damage when grown on raised beds.
- Leaf vegetables should be snapped by hand.
- Cabbage and lettuce should be cut and trimmed with a knife.
- Loosen bulbs with a digging fork before harvesting.
- To harvest cut cauliflower and broccoli with a knife.
- Fruit should ideally be cut or, if ripe, 'lift, twist and pull' holding the fruit in the palm of the hand (be careful not to damage fruit with fingers).
- Mature green fruit, or fruit with a wooden stalk should be clipped.
- Immature fruit with a fleshy stem can be cut with a knife (e.g. okra, zucchini, capsicum, and papaw).
- Harvesting bags allow both hands to be free and reduce fruit damage.
- Small plastic buckets are suitable for produce that can be crushed (e.g. tomatoes and beans).
- Bulk bins are used for large scale transportation of products like citrus, apples and cabbages.
- Transport carefully and slowly over bumpy roads.

In the packhouse

Grading of produce

- Grading can only separate different quality products it cannot improve quality.
- Remove damaged produce or else it will lower overall value and be a source of infection.
- Grade produce according to size and colour.
- Grading is best done by human eye.
- Photographs, training and sizing aids help staff to get their 'eye in'.

Packaging of produce

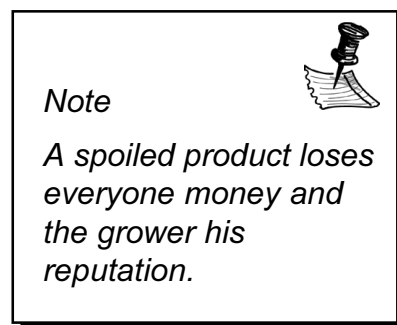
- Protects the produce from damage.
- Convenient unit for distribution.
- Can be an advert for the produce.
- Labels/Brands the product.
- The market in South Africa generally specifies types of packaging.³

Packhouses

- Should be designed to allow produce to flow in one direction.
- Washing should be done in clean, running water.
- Administer fungicide treatment by spraying and/or dipping.
- Dry produce thoroughly before packing.
- Grade and pack produce on tables, never on the ground.
- Store in a cool shady place. Dispatch as soon as possible.

Transport

- Avoid mechanical damage and overheating to produce.
- Protect produce from sun and rain.
- Produce should be transported in a vehicle covered with, i.e. tarpaulin or best of all a twin roof painted white.
- Allow for ventilation.
- Packaging and storage of the produce should allow free flow of air.
- Packaging should be done in appropriate size boxes to prevent damaging the produce. Do not overstack to prevent collapse.



³ See Paper No. 3 "The South African Horticultural Market."

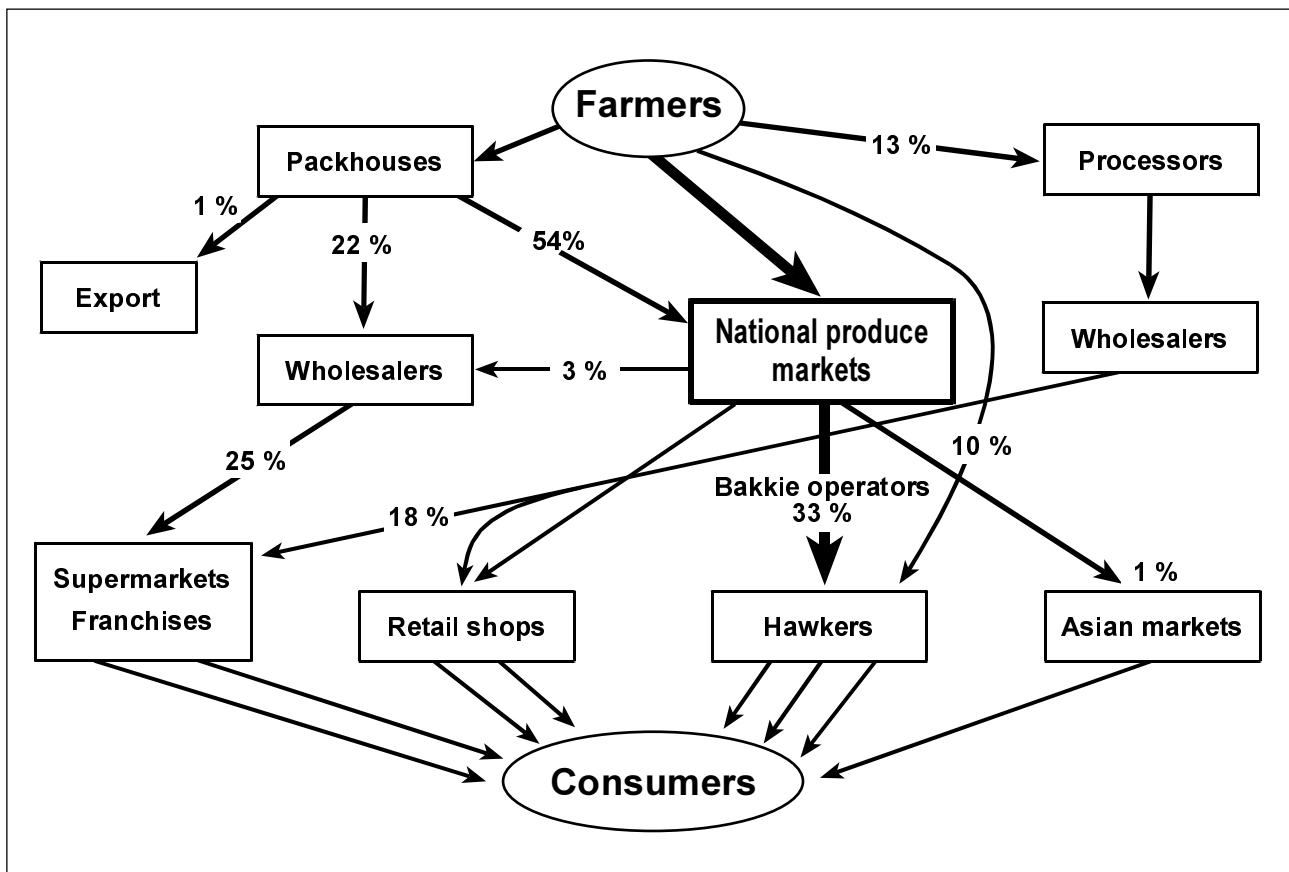


Figure 1: Diagram of marketing channels for vegetables

Visual aid 1

The expanding sectors are sales through the retail chain stores and supermarkets and via the informal trade. In addition, demand for specific products in the processing sector is increasing due to the demand for convenience foods.

The rise of direct marketing

Direct marketing has become much more important. Supermarkets, generally through their own procurement companies (e.g. Freshmark, on behalf of Shoprite Checkers), have direct relationships with their suppliers (300 farmers in the case of Freshmark of which about 10 are African). These suppliers have to deliver products of a **specified quality, pass stringent food hygiene standards and are given an indication of the volumes that they are expected to supply.** In addition direct purchases from farmers by hawkers and bakkie traders has also become more significant.

Table 1 estimates the proportion of produce sold through the different marketing channels. The direct marketing route accounts for between a quarter and a half of all fresh product sales. It is believed that between a quarter and a half of the direct sales is to the informal sector (i.e. hawkers and bakkie traders).

Direct sales have the advantage of cutting out the National Produce Markets in the marketing chain, saving some 12,5 % in commissions. This means of marketing is becoming more important, both due the rise in the supermarket sector and the sales through the informal sector.

Direct sales to the supermarket sector can result in higher prices but access to this market is difficult until a grower has a proven track record of producing high-quality product which adheres to the high standards of the supermarkets. Supermarkets are keen to be seen purchasing from emerging farmers. One entry point is to deliver produce to a packhouse where top quality products is packed specifically for supermarket customers along with products of other growers.

Hawkers and bakkie traders buy directly from farms. For the farmer this has the advantages of being a cash sale and the grower does not have to take responsibility for transporting the product. In addition the standards of packaging and grading are more flexible than other markets, although freshness and shelf life are critically important.

Table 1: Estimate of the volumes of product marketed through the different channels in the late 1990s. (Expressed as 000s of tons and as a percentage of the total.)

Product	Total	NPM*	Direct	Processed	Exported
Vegetables	2 000	1 080 (54 %)	640 (32 %)	260 (13 %)	20 (1 %)
Potatoes	1 700	935 (55 %)	480 (28 %)	128 (7.5 %)	185 (11 %)
Bananas	380	235 (62 %)	145 (38 %)¹	-	-
Oranges	990	115 (12 %)	115 (12 %)	210 (21 %)	550 (55 %)
Lemons	112	8 (7 %)	8 (7 %)	44 (39 %)	52 (46 %)
Grapefruit	141	4 (3 %)	4 (3 %)	48 (34 %)	85 (63 %)
Naartjies	90	19 (21 %)	7 (8 %) est.	18 (20 %) est.	46 (51 %)
Total citrus	1 355	160 (12 %)	152 (11 %)	318 (23 %)	730 (55 %)
Apples	561	141 (25 %)	40 (7 %)	195 (35 %)	185 (33 %)
Apricot	68	3 (5 %)	2 (3 %)	59 (87 %)	4 (6 %)
Pears	283	46 (15 %)	15 (5 %)	107 (38 %)	115 (41 %)
Peach	231	28 (12 %)	18 (8 %)	178 (63 %)	7 (3 %)
Plum	47	8 (17 %)	1 (2 %)	-	40 (85 %)
Deciduous	1 190	226 (19 %)	76 (6 %)	539 (45 %)	351 (29 %)
Grapes	1 554	23 (1,5 %)	17 (1 %)	1346 (87 %)	168 (11 %)
Avocado	100	25 (25 %)	25 (25 %) ²	10 (10 %)	40 (40 %)
Granadilla	1	0.7		0.1	
Lychee	7	3 (42 %)	0.6 (9 %)	0.4 (6 %)	3 (43 %)
Guava	18	4 (22 %)	1 (6 %)	13 (76 %)	-
Mangoes	46	20 (43 %)	1 (2 %)	13 (28 %)	12 (26 %)
Papaw	23	17 (74 %)	6 (26 %)		
Pineapple	149	18 (12 %)	3 (2 %)	121 (81 %)	7 (5 %)
Subtropical	344	87,7 (26 %)	17,6 (5 %)	161,1 (44 %)	88 (26 %)
Melons	100	74 (74 %)	26 (26 %)		

*NPM = National Produce Markets

A bakkie trader is concerned with minimising his time collecting produce, he is looking for sources of produce which are accessible (near to markets on good roads) and where he can rapidly fill his bakkie with produce (this can be one popular product, e.g. banana, or a range, e.g. tomatoes, cabbage, sweet peppers, etc.). This creates problems for an individual, small-scale farmer a long distance from the market on poor roads. An irrigation scheme with a large number of growers producing a range of products would be of interest to bakkie traders.

Links between farmers and hawkers/bakkie traders can be improved by the creation of regular assembly markets (e.g. a weekly market where growers deliver their product to a specific accessible point). Successful rural assembly markets provide the bakkie trader with the advantage of bulk purchases, rapid turn-round time and for the growers, create a competitive market for their product. The cellphone is making direct sales much easier. Growers can call bakkie traders offering them product and bakkie traders can organise an efficient and fast collection route from a number of small farms whilst on the road.

¹ Approximately 2/3 sold direct to wholesalers/supermarkets and 1/3 to hawkers

² Approximately 50:50 between direct sales to the supermarkets and bakkie traders

The continuing importance of the national produce markets

There are 14 National Produce Markets plus 5 privately owned wholesale markets. The largest is Johannesburg, marketing a third of all products and twice the size of Pretoria, the next largest.

The importance of National Produce Markets in South Africa

Produce sold through NPM is expressed as percentage:

4 large markets: Johannesburg 32 %, Pretoria 16 %, Cape Town 13 %, and Durban 10 %.

4 medium sized: Springs 5 %, East London 4 %, Pietermaritzburg 4 % and Port Elizabeth 3 %.

Smaller markets: Kimberley, Klerksdorp, Springs, Uitenhage, Vereeniging, Welkom, Bloemfontein, Nelspruit, Pietersburg, King Williamstown and Queenstown.

Prices are determined by the interaction and negotiation between the agents (representing the growers) and the buyers (wholesalers, retailers, hawkers, consumers, processors and institutional buyers). The NPMs are estimated to carry about:

- 55 % of vegetables and potatoes,
- 74 % of melons,
- 62 % of banana,
- 26 % of subtropical fruit,
- 19 % of deciduous fruit,
- 12 % of citrus and
- 1,5 % of all grapes grown in South Africa.

The low percentages for the last four categories of fruit are indicative of the importance of the export and processing markets.

Produce is sold to: retailers and greengrocers, wholesalers, (FreshMark, for example source about 15 % of their produce requirements from the Fresh Produce Markets), caterers and most importantly, hawkers.

Since 1990, when hawkers were allowed to trade legally, their importance in the market has been increasing. Estimates vary as to their importance. The NPM tend to underestimate their significance, suggesting that between $\frac{1}{4}$ and $\frac{1}{3}$ of sales are to hawkers. Informed opinion in the trade suggests much higher figures of about 60 %, rising to 80-90 % in the smaller markets.

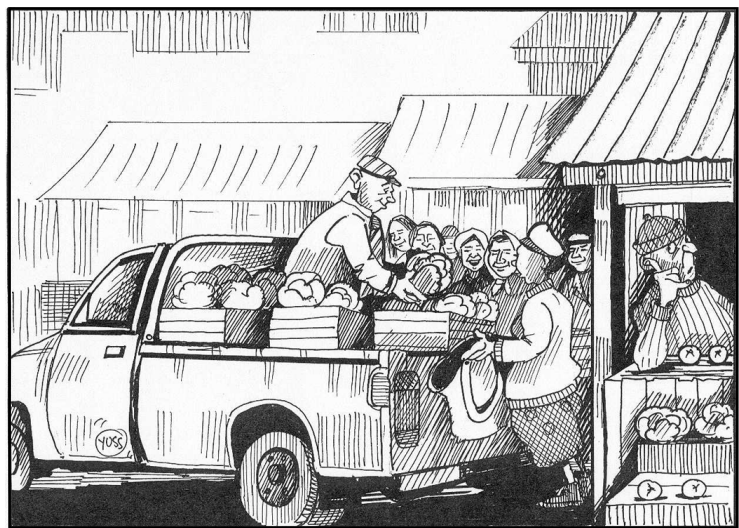
Hawkers

Hawkers have become increasingly sophisticated purchasers. They have preferences for **fresh, high quality product with a good shelf life.**

Group purchases are common, with groups of hawkers collectively buying and transporting products so as to obtain lower prices through bulk purchase and reduced transport costs through fully utilising the bakkie transport available.

There are even secondary wholesalers, who take orders from and deliver to hawkers, purchasing the product from the market, and organising the transport with the bakkie operators.

Previously NPM made it difficult for hawkers to purchase in the markets so that they would be forced to make their purchases at Asian markets or from wholesalers. Now that hawkers can purchase directly at the NPM these other operators in the market chain are in decline.



Now that hawkers can purchase directly at the NPM these other operators in the market chain are in decline.

Hawkers sell on the streets to black and white consumers and in the townships. Township purchasers place a premium on value for money. This definitely does not mean cheap low quality product, but specifically product with a good shelf life. There are also suggestions that the African taste is in some ways different from that of the white market. Examples are the demand for plum/processing tomatoes, leafy beetroot, fresh cabbage and indigenous leafy vegetables, e.g. *Amaranthus* spp. (marog) and *Cleome* (lerotho).

The hawker is directly competing against extremely large-scale farmers who can fill a 12-20 ton lorry and are therefore able to obtain cheap transport costs.

Because of the way the NPM markets are financially structured, whereby payment is made through the market (rather than the agents as is most commonly the case), grower payment is secure. Prices received can be checked against the market's own price information service.

Emerging or small-scale farmer

For the emerging farmer to access this market requires the ability to:

Organise cost-effective transport of his product to the NPM cost-effectively. This involves linkages with transport companies. Often this involves delivering product to a warehouse facility, but with cellphones it is possible to organise a collection service on farms.

- **Concentrating on products specifically targeted.** The strengthening of the black economy is creating opportunities, and opportunities which emerging farmers may be better equipped to serve, for example, by concentrating on products specifically targeted on the African taste.

Some markets, such as Pretoria, have increased the volume of products which flows through them by building retail or semi-wholesale markets in the nearby townships. The building of markets in townships could have the effect of:

- facilitating the sale of products to the African market,
- creating job opportunities,
- a market for African products and
- a hub for generating African businesses where the added value is circulated through the black economy.

Processing sector

The table below estimates the tonnage of vegetables annually processed in South Africa and their suitability for production by small scale/labour intensive farmers.

Demand is increasing for tomato paste, processed beetroot, frozen broccoli, potato chips (8 % increase per annum) while export markets are said to exist for small gherkins (which are picked by hand) and sweet corn.

Table 2: Vegetable processing sector in South Africa

Product	Ton	Production	Demand
Tomatoes	180 000	Labour intensive	Increasing
Potatoes	130 000	Mechanised	Increasing
Sweet corn	25 000	Labour intensive	Flat
Peas	15 000	Mechanised	Falling
Green beans	8 000	Mechanised	Falling
Broccoli	8 000	Labour intensive	Increasing
Carrots	6 000	Labour intensive	Flat
Cabbage	5 000	Labour intensive	Flat
Butternut squash	5 000	Labour intensive	Flat
Cauliflower	3 000	Labour intensive	Flat
Beetroot	2 000	Labour intensive	Increasing
Small gherkins	1 500	Labour intensive	Increasing

In the fruit sector the volumes processed annually as seen in Table 3.

Table 3: Volumes processed by the fruit processing sector in ton per annum

Products	Juice	Wine	Dried	Canned	Other
Oranges	180 000			1 600	47 000
Grapefruit	34 200			3 000	
Lemon	24 000				6 000
Apples	190 000		2 000	8 000	
Peaches	9 000		2 000	175 000	
Pears	36 500		2 000	80 000	
Apricots	3 000		35 000	39 000	
Pineapples	30 000			83 000	
Guava	19 000			6 000	
Avocados					10 000
Mango	9 500			3 000	
Grapes	133 00	1 170 000	170 000		

Table 4: Major companies in the South African processing sector

Company	Description
Tiger Brands (Langerberg)	Mostly canned vegetables, biggest producer in processed tomato products and in canned fruits (range of labels).
Macain (formally I&J, combining Harvest Time, Table Top & Pilsbury Foods)	Canadian investment in South Africa, dominates the frozen vegetable sector producing frozen peas, beans, cauliflower, broccoli, sweet corn, carrots, stir fries, French cut, but most importantly MacCain's frozen chips, both as a consumer product and to supply the fast food sector, e.g. MacDonalds and Burger King.
Nestle	Under the Cross & Blackwell label a range of products i.e. Mayonnaise, canned vegetables and most recently and successfully 'Chakalaka' a sauce containing a range of vegetables (tomatoes, onions, carrots, beans, chilli, ginger and garlic).*
Gaings (formally Giant Foods)	Northern Province, range of canned foods.
Del Monte	Range of canned fruit and vegetables.
Rhodes Fruit	Canned fruit plus some canned beans and peas.
Heinz	70 % USA owned, based in Nelspruit produces dried vegetables especially onions and dried tomatoes and paste.
South African Dried Fruit	Biggest player, approximately 60 % of all dried fruit products drying +120 000 tons p.a.
South African Raisins	Only Raisins, 20 % of all dried fruit.
KWV	Huge in brandy, smaller in wine.
Wine	340 cellars of which 70 are cooperatives. Major players include Stellenbosch Farmers Winery, Stellenbosch Vineyards, Orange River, Swartland, Robertson,

* Chakalaka: although targeted on the emerging affluent Black demand for convenience foods, still does not have the right taste, suggesting opportunities for other canners.

Conclusions

- Processing offers the potential of a stable contract income to growers, although the prices can be significantly lower than in the fresh markets. For this reason processors are interested in working with growers who, because of their isolation from the major fresh produce markets, are likely to be committed to supplying them with product.
- Isolated irrigation schemes are a classic example of where mutually beneficial linkages could be created between a group of small-scale farmers and agribusiness.

- Some companies, e.g. I&J, are actively seeking to buy produce from the emerging sector.
- Small-scale farmers do generally have comparative advantages on labour intensive crops (e.g. hand harvested and hand planted).

The strengthening of the Black economy and the movement to live in towns are all likely to lead to increases in the demand for African convenience foods (e.g. chakalaka).

Export sector

Outspan and Unifruco have formed a single company, Capespan, which is one of the largest and most progressive companies in the international fruit trade. Capespan has its own operating companies in its export markets to ensure control of the marketing processes and added value in the marketing chain. Generally they ensure that they maintain control of the exported fruit up to until the supermarket distribution centres. A number of other major international fruit trading companies have lately invested in South Africa (e.g. Del Monte and Dole) as well as a number of both South African-owned and foreign-owned export companies operating in South Africa.

Table 5: Major companies in the South African export sector

Company	Description
Capespan	Around 60 % of all fruit exports, citrus 30 million cartons (Outspan brand), deciduous 25 million cartons (Cape brand) and subtropical (Bella Nova brand) about 5 million cartons.
SAFE	A Dutch owned company, believed to be second largest exporter took significant market share by being able to offer fixed prices and good payment terms.
Dole SA	A US owned multinational company fruit company aiming to reach 7 million cartons.
Del Monte	An Arabic owned multinational fruit company aiming to take 5 % of fruit export market.
Intertrading	SA owned, exports about 3 million cartons.
Table Mountain	Deciduous fruit exporter.
Iona	Small niche player, SA owned.
Oceanic	Very strong in Middle East, Germany and own ships.
Westfalia Marketing	A grouping of some of the largest avocado growers in South Africa.
Katope	A joint venture with Malet Azoulet, a major French import company.
HR Hall & Sons	Grower group.

Table 6: Export tonnages from South Africa (1998)

Product	Tons	Trend
Apples	200 000	→
Apricots	4 500	↗
Grapes	167 000	↗
Pears	115 000	→
Peaches	6 500	→
Plums	42 000	↗
Oranges	115 000	→
Grapefruit	84 000	→
Lemons	52 000	↗
Easy peelers (naartjies)	46 000	↗
Avocados	66 000	↗
Mangoes	12 500	↗
Pineapples	6 500	↗
Potatoes	185 000	↗
Vegetables	20 000	↗

Based on 1999 export values citrus exports are worth R1 867 million, grapes (R1 279 million), wine (R1 279 million) and deciduous fruit (R888 million).

The main features of the international export market are:

- In the fresh produce trade products are only exportable **if the import market cannot produce a crop**, for example during the off season or because the climate is not suitable such as in the case of tropical crops in Europe. (South Africa's export industry is mainly built upon the supply of off-season fruit because being in the southern hemisphere, production is generally 6 months out of phase with the production in the major markets of the northern hemisphere).
- **Over supply**, and therefore falling prices, in almost all products, unit costs (distribution, packaging, and overheads) have to be minimised—mainly by economies of scale.
- **Export companies internationally have consolidated** into the hands of a few major players. (South Africa is one of the very few countries where the number of export companies has increased).
- **Consolidation** of the buying into the hands of very **few major buyers**, mainly supermarket chains.
- **Food safety** is a critical issue with the consumer. This has resulted in Food Hygiene legislation in the major markets of the world insisting that the retailer shows 'due diligence'. He, in turn, passes that responsibility down to his suppliers. The result is that each farmer, packhouse and exporter must adhere to incredibly strict systems so that a problem package can be traced back to the farm from where it originated.
Food hygiene standards in the packhouse (each supermarket may have its own standards which are complex and expensive to implement), as well as the spray programmes must conform to the buyers' specification and a record must be kept of all products used.
- Most recently, supermarkets are insisting that their suppliers adhere to **strict social and environmental standards**.

Fresh produce exporting is increasingly an activity that is only carried out by major companies. Export growers are all top quality growers capable of achieving, consistently, very high standards of professionalism. In general it is the importer who determines who will export and which growers are considered suitable.

The export market is not one for new farmers, but only for the experienced, professional and top quality grower. The demands of the European markets for 'due diligence', stringent food hygiene specifications, traceability, and strictly controlled spray programmes have effectively reduced the number of export farms and almost precluded the role of small farms completely, throughout the world. Established growers can access this market, but only after they have proven their capacity and skills. There are, however, a number of examples of joint ventures between farm workers and entrepreneurial farmers/managers which as a farming company with skilled managers and a clear divisions between ownership and management, are growing and exporting produce to the world's most demanding markets.

Consumer sector

The consumer sector can be conveniently divided into four sectors (A, B, C and D). Typically, sectors A and B, which have a household income of over R2 500 per month, buy their food from the formal sector. As their income increases so does their demand for quality products, luxury foods, prepared and semi-prepared foods. A supermarket serving the A sector could have up to 17 lines of tomatoes (e.g. cherry tomatoes, beefsteak, vine ripe, pre-packed, loose and plum).

When household incomes are below R2 500 consumers are much more concerned with value for money. They will not pay premiums for specialist products. They are very concerned with freshness and shelf life and will often pay higher unit prices for product which will hold better, assessing it to be better value because they will not have to throw any of it away. They mainly buy their produce from the informal sector.

The distribution chain for fresh produce mirrors the dual economy in South Africa. Production is carried out by a relatively few, relatively large, established commercial producers and a multiple of fragmented, small-scale producers.

The supermarkets and the independent franchise chains (e.g. Spar, Sentra, 7 Eleven, Rite Value, Family Pick 'n Pay) are servicing the A and B sectors. This area is a growth sector and is likely to continue, with the increased importance of convenience shopping, supermarket chains and the use of fresh produce by the supermarket chains to distinguish themselves from one another.

Consumer demand is changing in South Africa. The country has a numerous ethnic groups, each with their own preferences. This creates numerous niche product opportunities, e.g. Asian vegetables for the Indian

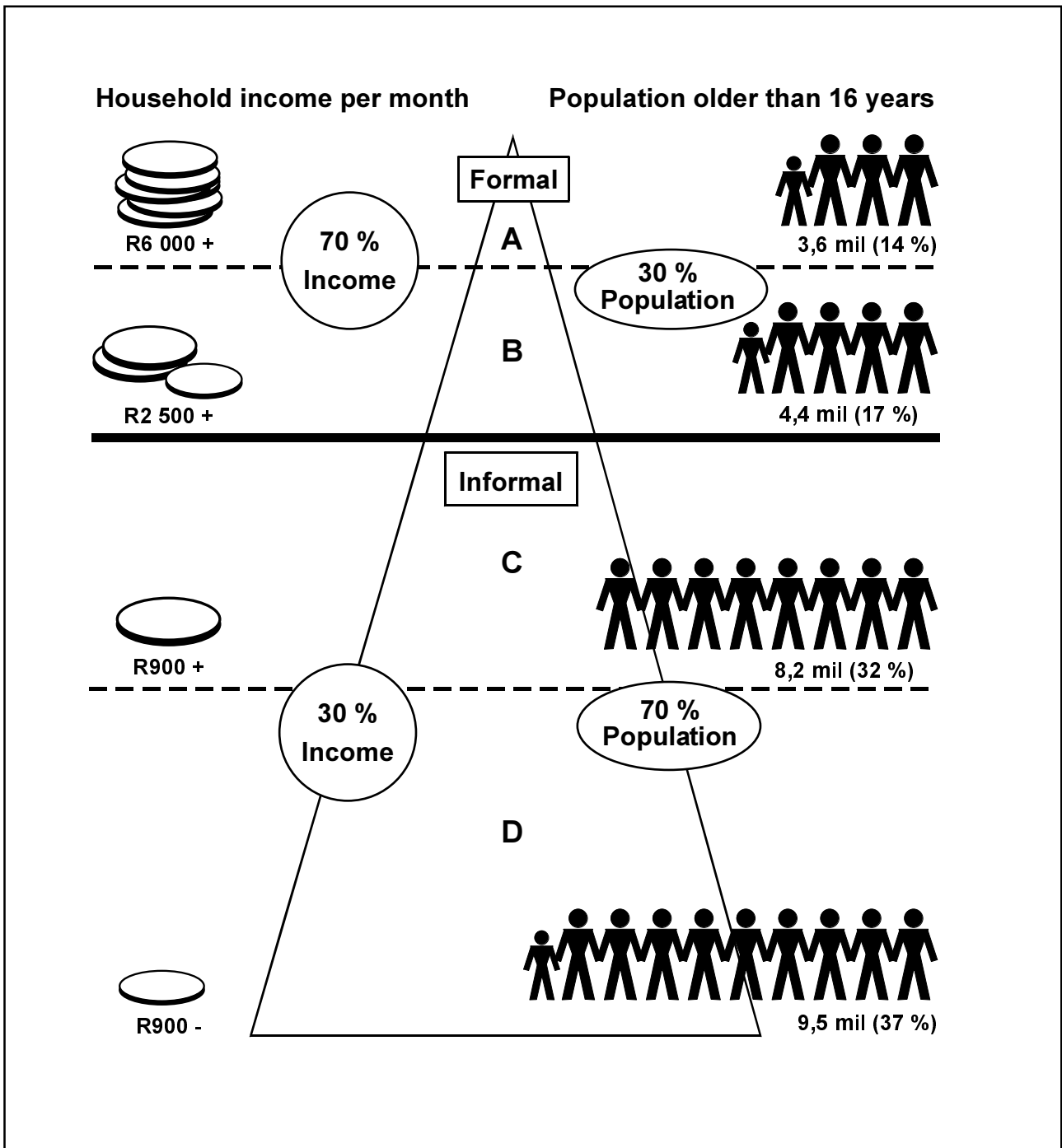


Figure 2: Diagram of a marketing channel according to the wealth of the consumer

community in Durban, Madingo for the Zulu population in KwaZulu-Natal. Sections of the African population are becoming more affluent, creating a demand for convenience African food products (i.e. chakalaka). Deregulation and the legalisation of hawking has strengthened the informal sector.

African farmers could have a comparative advantage in supplying the African demand for fresh and processed horticultural products because of their insight into consumer needs. Currently the fastest growing incomes are found amongst the new African elite in South Africa.

Product information

Sources of information

Quantitative information presented below has been taken from *National Abstract of Agricultural Statistics, Crops and Markets*, quarterly reports, *Johannesburg National Fresh Produce Market Trading Index* as well as information from trade interviews and discussions with various crop associations. The long term price and supply data is compiled from NDA statistical information.

Individual products

Tomatoes

In NPM sales of tomatoes are increasing by less than 1 % per annum. Prices are very variable, typically lowest in January through to May and highest in September and October. Durban has high prices during June and July.

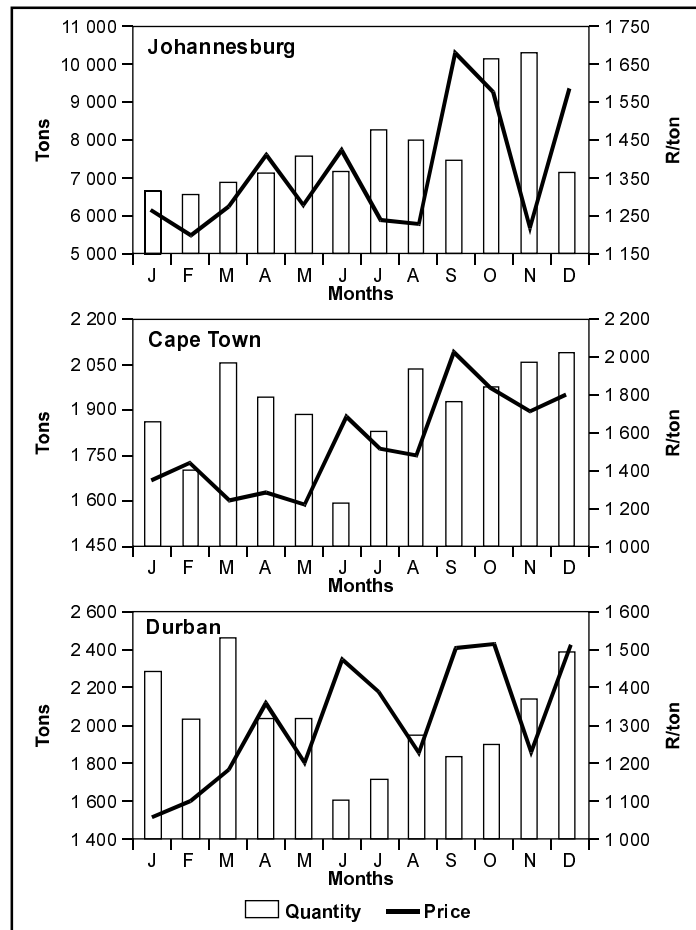
Tomatoes are most commonly packed in 6 kg wooden boxes with a gross weight of 6,4 kg and sold in 4 classes. (See Government Notice R 1975 September 1984.) Tomatoes in a box should be of the same size and colour. If Class 1 is sold in NPM at R10.50, Class 2 will sell at R9.00, Class 3 at R8.00 and Class 4 at R6.50. Prices per kg are most commonly in the range of R1.30 to R1.80, averaging R1.60 per kg. The most commonly marketed product is the Class 1 tomato box. The cost of a tomato box is about R2.00, and the transport from Letsitele to Gauteng another R2.00 per box.

Amongst the African and Asian population there is a preference for processing/plum tomatoes making it a more sold product. It has a better shelf life, flavour and is excellent for creating a thick sauce in stews and curries.

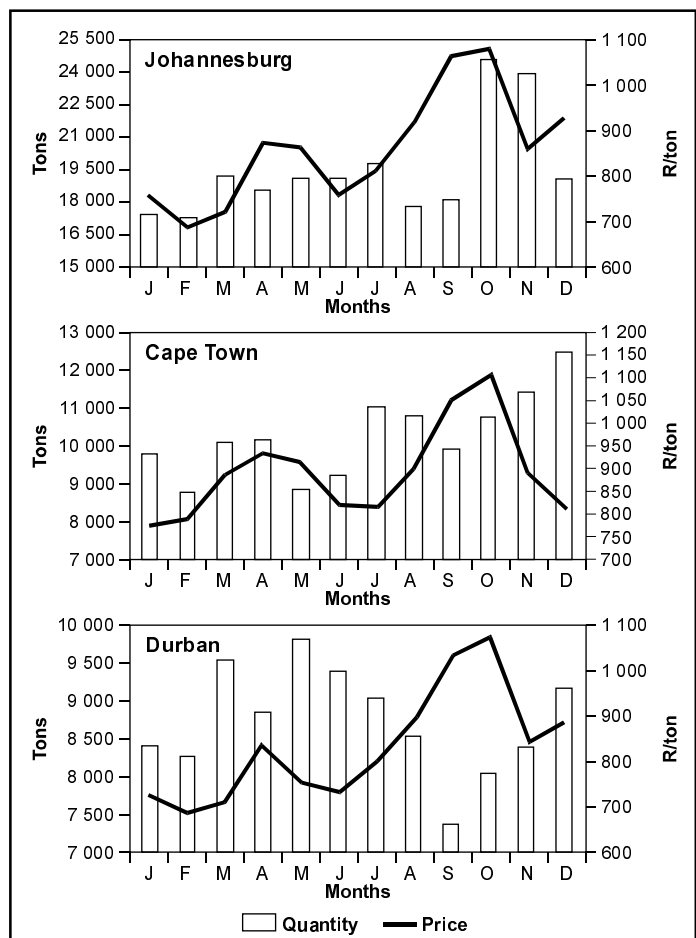
Potatoes

Graded into 4 Classes, in terms of quality. Each Class is subdivided into 5 size categories (according to Regulation R1 755, in 1993 and amended in July 1996 in R1 106):

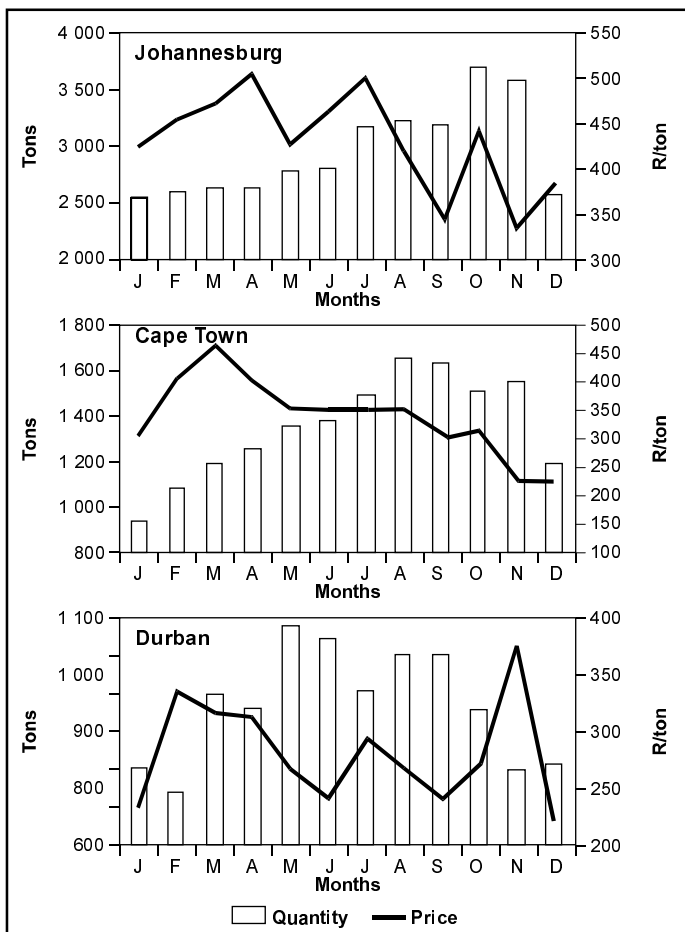
- extra large,
- large (above 200 g),
- medium (250-80 g),
- small (100-40 g),
- extra small (50-15 g), while
- new potatoes must be in the 20-5 g range.



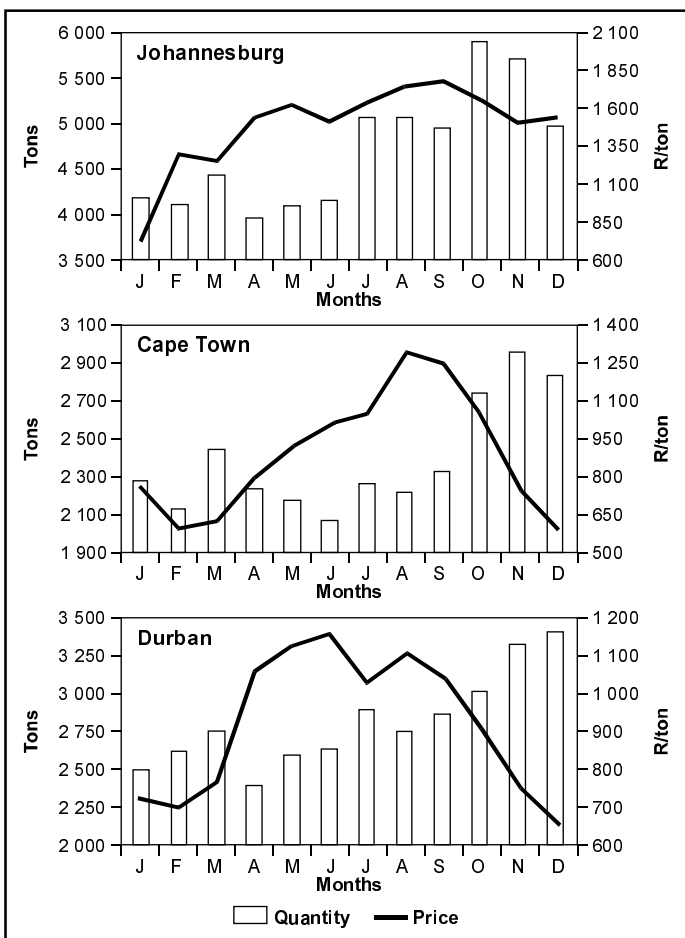
Average tomato sales on three Fresh Produce Markets



Average potato sales on three Fresh Produce Markets



Average cabbage sales on three Fresh Produce Markets



Average onion sales on three Fresh Produce Markets

Most commonly marketed in 10 kg pockets (reinforced paper sacks). The most common product is Class 1 potatoes in medium size. Sales have been increasing by just over 2 % per annum in the NPM. Potato prices are highest in September and October, before the start of the new season main crop. Prices are relatively stable, mainly in the R0.85 to R1.00 range with an average of approximately R1.00 per kilogram.

Cabbage

Sales through the NPM have decreased by around 1,5 % per annum. A variety of packaging is used including second-hand banana boxes (16 kg), crates (35 kg) and, most importantly, sugar pockets (18 kg). The supply patterns vary according to market, typically volumes are low from December through April and peak in August through to November. Generally, prices are highest in February through to April.

Cabbages are a low priced product wholesaling typically in the range of R0.30 to R0.80 per kg, averaging about R0.45. There has been the suggestion that the African market is especially sensitive to the freshness of cabbage, possibly conferring advantages on peri-urban growers with very fresh produce.

Despite the decline in sales through the NPM the seed trade reports an expansion in sales of cabbage seed of around 5 % per annum and increased sales of cabbage hybrid seed. This implies increased production, with direct marketing becoming more important.

Onions

Sales of onions have increased by 7,2 % per annum in the NPM. Onions are graded into three classes and this in turn is subdivided into five size categories (see Government Notice R 1268 June 1981):

- extra large (over 90 mm),
- large (90-70 mm),
- medium (70-40 mm),
- small (50-35 mm) and
- pickles (35-10 mm).

The most common product marketed is the Class 1 medium size packed in a 10 kg pocket (normally coloured red or orange). Onion prices are highest during the period from April until September. Prices are typically in the range R0.70 to R1.30, with an average of R0.90 per kilogram.

Pumpkins

Sales in the NPM have been growing at the rate of 4,7 % per annum. Prices peak in September through to November, when supplies are lowest (except in the Johannesburg markets). Pumpkins are primarily marketed in sugar pockets containing 35 kg of product. Prices are typically in the range of R0.40 to R0.75 with an average price of about R0.56.

Carrots

Sales though NPM have grown at 3 % per annum. Carrots are mainly marketed in 15 kg pockets, but are also sold in 80 kg crates. Prices are highest in March through to May and lowest in November, when supplies peak. Prices are most commonly in the range of R0.80 to R1.30 per kg, with an average of about R1.00 per kg.

Gem squashes

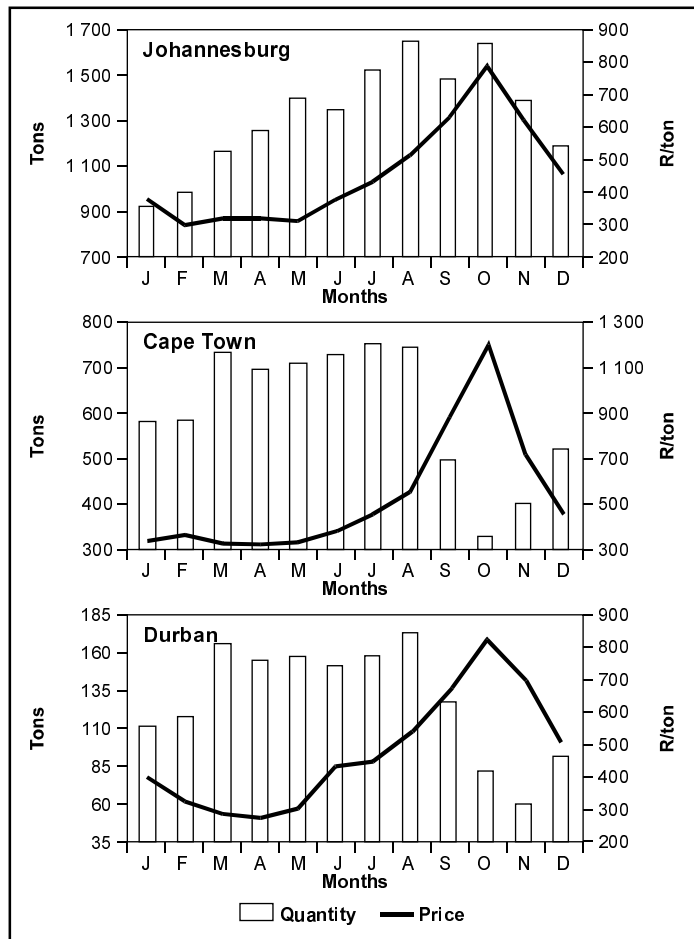
Sales of gem squashes have been in decline on the NPM markets at the rate of 2,35 % per annum. Gem squash are typically packed in 8 kg pockets. Prices peak in July to September, with August traditionally giving the highest prices. Wholesale prices are generally in the range of R0.60 to R1.00 per kg, with an average of approximately R0.90.

Sweet potatoes

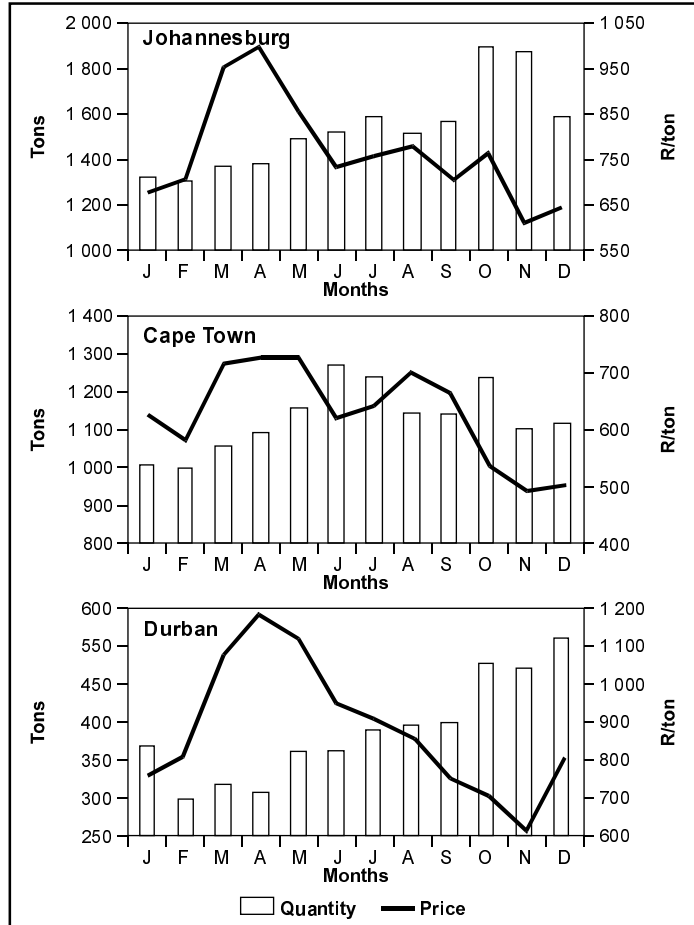
Mainly sold in 30 kg pockets or, to a lesser extent, in 10 kg boxes. Prices are typically highest in December through to February. Average prices are R0.70 to R0.80 per kg.

Green mealies

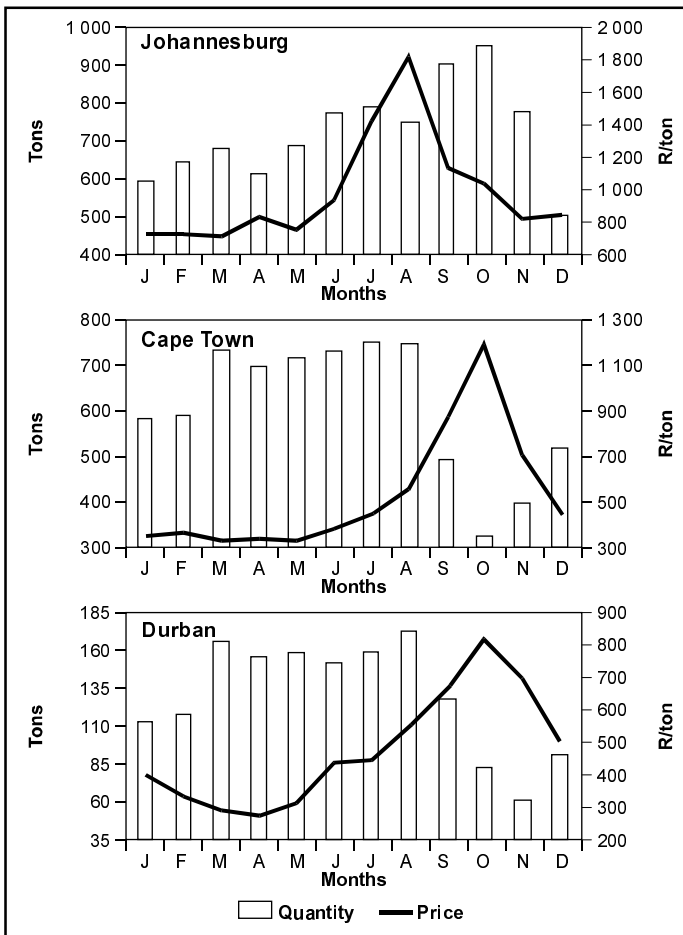
Mainly sold in the NPM is 12,5 kg pockets. Peak prices are achieved in the weeks before Christmas when prices of R1.50 per cob can be achieved as a fresh product. Planting needs to take place in the first week of July to harvest in the last week in November. Sales to bakkie traders are believed to be especially important. Typically, prices in the NPM per kg are R0.67.



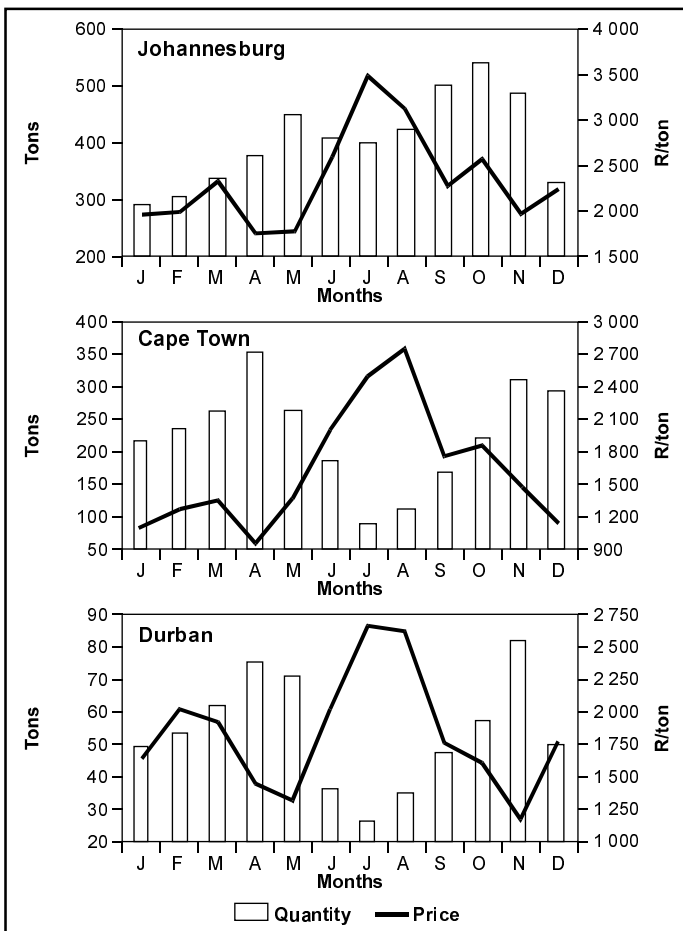
Average pumpkin sales on three Fresh Produce Markets



Average carrot sales on three Fresh Produce Markets



Average gem squash sales on three Fresh Produce Markets



Average green bean sales on three Fresh Produce Markets

Green beans

Sales through the NPM of green beans has boomed over the last 10 years, increasing at the rate of over 19 % per annum. Beans are packed in 5 kg boxes. Supplies are weakest in June through to September, when prices are highest.

Sweet peppers

Although statistics are not readily available informed opinion indicates that production and sales of sweet peppers have increased.

Beetroot

Sales have increased markedly because of the demand from the informal and African market. Especially for the older varieties with a lot of leaf, as both the root and the leaf is used as a vegetable.

Indigenous vegetable crops

Indigenous vegetables have been neglected by white commercial farmers. There is a suggestion that, if available, these products do find a ready market. Potential crops are the leaf vegetables such as Amaranth (marog), *Cleome gynandra* (bastard mustard, lerottho), beans such as cowpeas (dinawa), pigeon peas and the bambara groundnut (ditloo, njugo bean) and root crops such as the African or Livingston potato, madumbi, Zulu potato and cassava.

Trials are underway in Gauteng (Soweto-Walkerville-Meyerton areas). ARC are developing production techniques, e.g. cutting the Amaranth at 30 cm so that the leaf can be cut every 10 days for about 4 months, and introducing new cultivars. Lerottho is a sweeter tasting leaf vegetable, but much lower yield than marog. Often the two products are sold mixed together. In addition they can also be dried and sold during the winter season. Another potential product is dried and powered Lerotse, a wild melon, which with milk can be used as a breakfast cereal and as a dessert.

Bananas

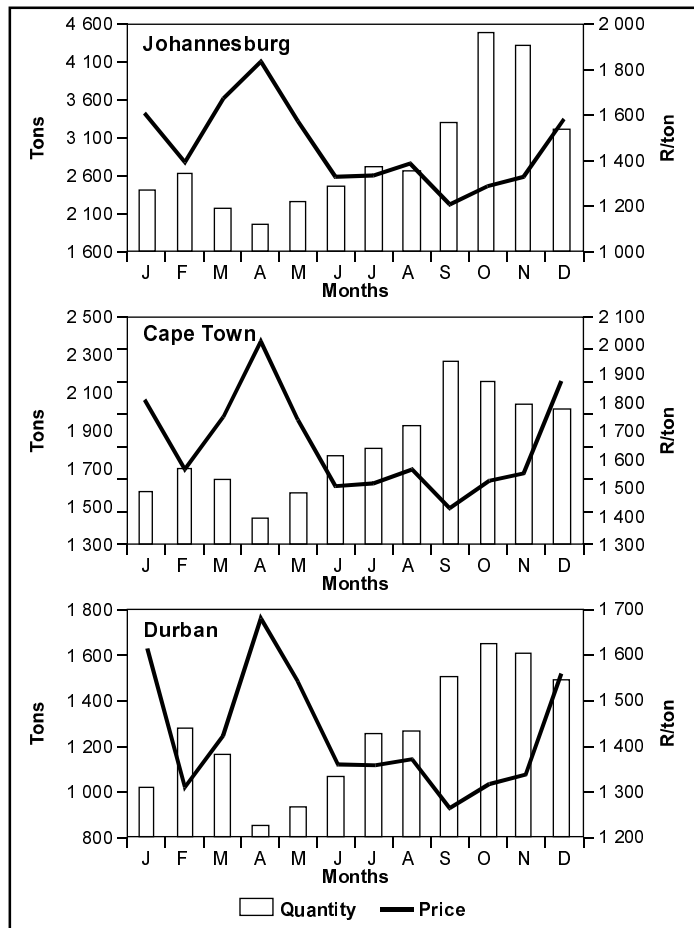
Packed in 20 kg cartons. Supplies peak in September through to December and then fall back, when prices peak, especially in April when supplies are weakest. NPM prices are typically in the range R1.20 to R1.70, with average prices being about R1.60 per kg. Markets take 62 % of production, 26 % to the chain stores and a further 12 % to bakkie traders who buy direct from the farm. Sales through the NPM and total production have increased by 20 % per annum. This reflects a strong growth in demand from the informal sector. Prices have stayed the same for the last 4 years. Only those producers who have increased yields have remained profitable. The major variety is Grand Nane, followed by William's, while Dwarf Cavendish is in decline. Production has increasingly centred on the better growing conditions in Komatipoort.

Mangoes

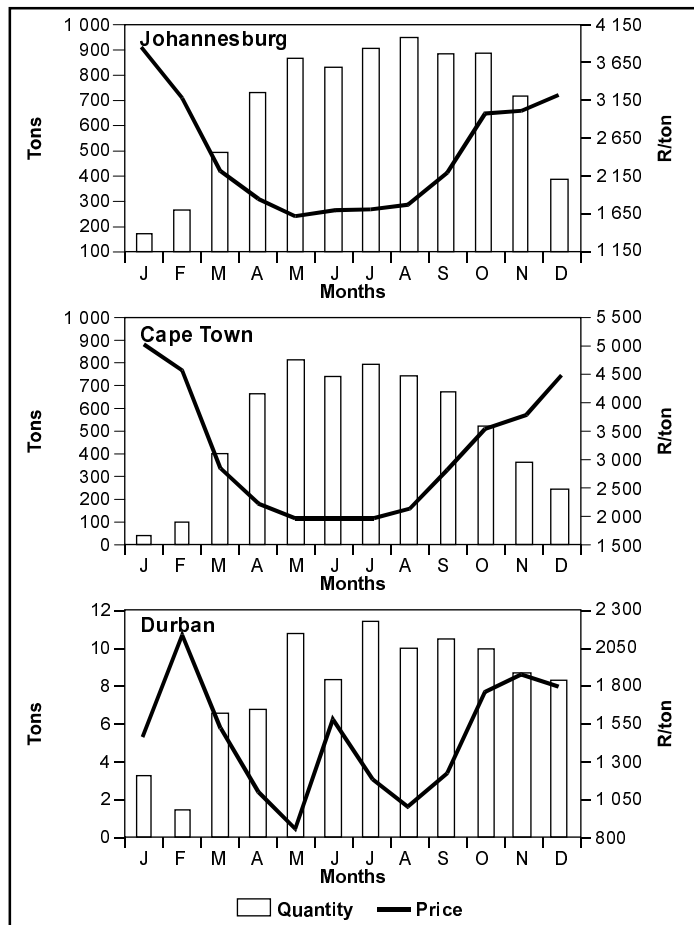
Sales through the NPM have increased by nearly 3 % per annum. Average price is R2.50 per kg. In 2000 the typical selling price was R11.50 to R12.00 for a 4 kg/net box on the NPM. Bakkie traders buying direct on the farm would pay R50 for 22 kg (R2.27/kg) for mangoes from Hoedspruit, because of their superior quality. While in Tzaneen, the price was only R25 for a 22 kg lug (R1.14/kg). The informal market has a preference for well coloured (e.g. Red blush) mangoes.

Avocados

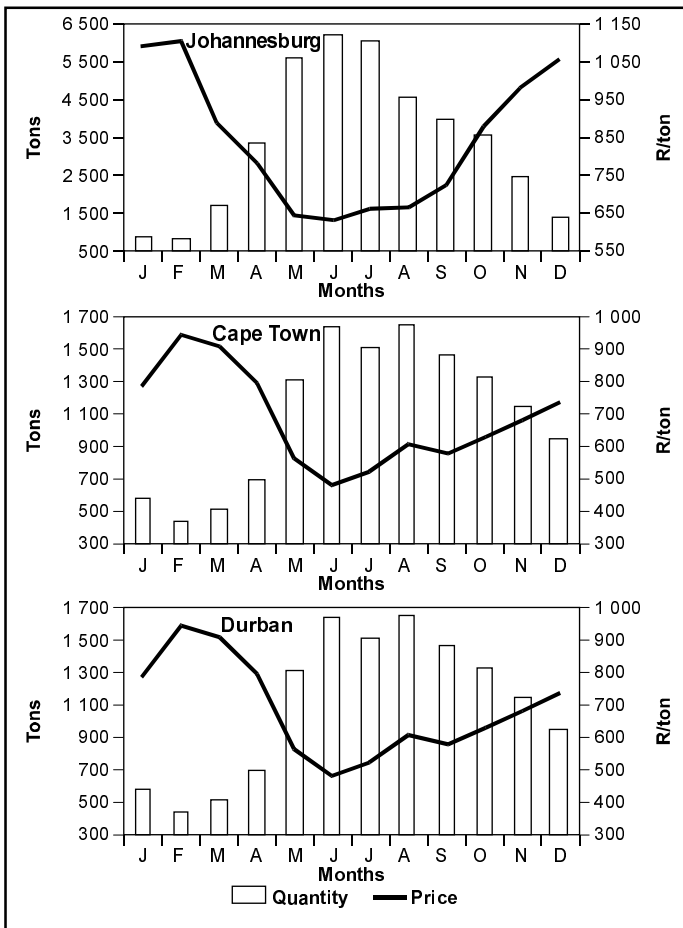
The main supply is from April until about October. Sales and prices are extremely low in Durban compared to other markets. Average wholesale prices are about R2.10/kg. About 25% of sales are direct from the farm packhouse, of which about half are to the Supermarket sector and the rest to bakkie traders. The main varieties are Feurte and Hass which are packed in 4,5kg trays.



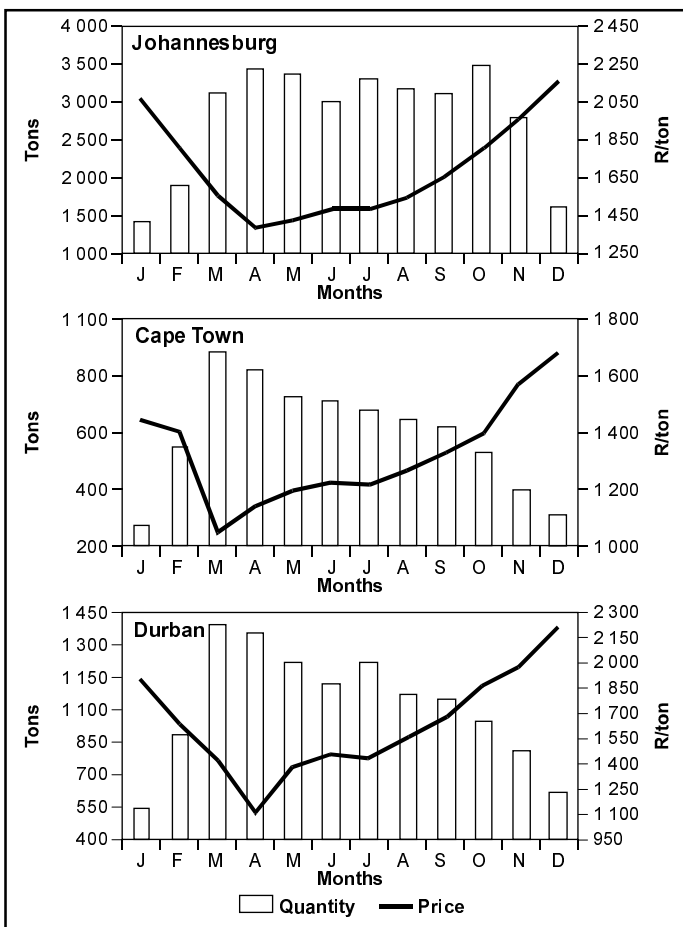
Average banana sales on three Fresh Produce Markets



Average avocado sales on three Fresh Produce Markets



Average orange sales on three Fresh Produce Markets



Average apple sales on three Fresh Produce Markets

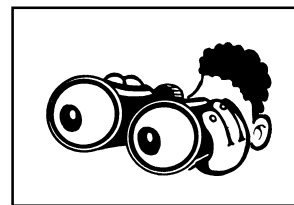
Oranges

Mainly marketed in 10 kg pockets. Navels are marketed from March to July and Valencia from July to January. Oranges achieve an average NPM price of about R0.85/kg. Exports receive a far higher price (e.g. R1.83 in 98/99) and processing oranges a lower price.

Apples

Sold in the NPM market in 12,5 kg and 11 kg cartons. The most popular product on the local market is the Class 2 (1,5 kg), jumble pack. Prices are lowest in April, with the arrival of the new season apple crop and increase as the supply diminishes, peaking in December.

Focus points for the extension officer



What the extension officer needs to know

- Different strategies of small-scale horticultural farms.
- How to contact transport companies, national produce markets, market agents, processors, bakkie traders.
- Typical prices and price patterns, typical periods of over and under supply.
- Where to obtain details of the national grading standards.
- Sources and prices of packaging.
- Basic advice on how to improve shelf life through the application of simple post harvest principals.
- What crops are produced in the area and whether there are any unique selling points about them?
- Sources of market price information.
- An understanding of the market channels and the products in demand.
- An understanding of successful horticultural farms.

What the extension officer can do

- Advise farmers on grouping together to transport product to market.
- Training groups of farmers by talks by traders, successful farmers, transport companies and giving talks him/herself on post harvest handling, findings in the market.
- Advising farmers on the alternative grants schemes and sources of funds.
- Explaining to farmers the options for marketing his produce.
- Acting as a facilitator between growers and processors, agribusiness, partners, mentors.
- Research the market.
- Advise traders of where produce is available and the projects, schemes with whom they might trade.
- Taking farmers to a market.
- Introducing hawkers/bakkie traders to farmers and working together to organise a reliable method of collection and purchase of produce.
- Advising what crops to grow and when to target production.
- Acting as a link between producers and projects.

Now that the farmers understand the technology, have generated sufficient cash to pay for their own inputs, Langerburg, who now own the processing factory, do not need to provide credit or technical support. The growers now supply both the local market and the factory.

Conclusions

- **Processing factories do offer the possibility of a reliable demand, but prices are generally lower than the fresh market except in times of glut (a saturated market).**
- **Contract production is always useful in that it provides income stability.**
- **In this case the processing company took a bold decision to cover input costs and advice so that they could be assured that there was sufficient produce to supply for the factory and the local fresh market.**

Vegetable farmers from Northern Province

Commercial vegetable farming by emerging farmers is well developed in Northern Province. The stories of Steven Marley and Mr TC Hlayisi illustrates some important points.

Steven Marley started with 3 ha of land in 1979, which he cultivated by hand himself. He had R4 000 and invested R1 600 in an irrigation pump and pipes. He chose to grow **chillies and sweet peppers**, because these were products he knew he could sell and they were easier and cheaper to grow than tomatoes. He would load his van and drive 30 km to Letsitele, where a transport company would take his produce to either Johannesburg or Pretoria market, depending on which had the higher prices. He would check the prices by phoning from a public phone box. Without ever borrowing money he has grown the business out of profits to now cover 400 ha and he employs 138 people and now also grows tomatoes. He now has a cellphone and a fax machine. He calls all the markets or receives faxes to check prices from all the markets. He then decides whether to send his produce to Johannesburg, Pretoria, Springs, Witbank or Klerksdorp. He still uses the same trucking company.

Mr TC Hlayisi started farming in 1986 with 5 ha of land. Initially he grew maize and wheat, but quickly decided he needed to grow more high-value crops as his area was so small. He switched to beans and vegetables (tomatoes, cabbages, green beans, okra, and onions). The beans he sold to the NPK (the local cooperative) and the vegetables to local markets as well as Johannesburg and Pretoria He used the same transporter in Letsitele. He has borrowed R1,28 million from the First National Bank, which he repaid. He now owns 35 ha of irrigated land on which he farms with bananas (as it is less trouble than vegetables) and a further 1 100 ha of owned cattle farm, plus another 1 400 ha leased. In his fruit and vegetable farming he uses the cellphone to monitor prices. He visits the market every two months to assess the performance of his marketing agents.

Conclusions

- **Both farmers put their success down to their love and commitment to farming, acknowledging that they might have made more money in other businesses.**
- **They both regularly check prices, use cellphones and faxes, check up on their agents, switch products to different markets if they think they can make more money.**
- **Both, however, could not have started to sell their produce in the major markets of Gauteng if there hadn't been the trucking company in place.**

Gauteng Province Farmer settlement programme

Gauteng has a farmer settlement programme where farmers are provided with 2 to 4 ha of land on a lease basis, with the option to buy after three years. The Provincial Department of Agriculture recognised that the key advantage of these farmers was that they were very near to the huge markets of Gauteng, but that because of the small size of their farms they needed extremely high value crops, possibly linked to new technology to be able to generate sensible incomes from their farms. The farms mainly operated on the basis of growing spinach (Swiss Chard).

The Province contracted ARC to identify indigenous vegetables and then to work with selected growers to field trial the crops. ARC identified a range of leaf vegetables (marog and lerotho), root crops (African potato, cassava) and beans (bambara groundnuts, cowpeas). Production techniques have been developed, elite seed provided and farmers trained in production techniques of the crops. Farmers were given the choice of testing the crop that they were most interested in. This programme continues. The Province is considering how these crops can be linked with modern technology. For example low tunnels and hydroponics are being tested as a method of extending the marketing season for the leaf vegetables into the winter months.

Conclusions:

- **Small-scale farmers need to increase the output of their enterprises to be viable. They should explore crops which have some unique selling points (e.g. freshness in highly perishable products and indigenous vegetables).**
- **Technology will also be used to further increase sales from these small sized farms.**

Misgund Landgoed Farms Lankloof, Eastern Cape

A farm came onto the market near to the farms of Mr Hendrick Kritsenger in May 1996 for R2 000 000, comprising 33 ha of apples mainly grown for export. Previously, the farm had been managed by a professional manager who was retiring and the owners, who are based in Paarl, decided not to continue running the farm as it was isolated from their other businesses.

Mr Kritsenger wanted to help his farm workers to invest in their own business. With the R15 000 grant per person available from Land Affairs, 154 shareholders were required to purchase the farm, without borrowings. The shareholders included farm workers from other farms in the vicinity. The farm was purchased after the 1996 fruit season. Mr Kritsenger loaned working capital of R600 000 for the first year. 25 of his employees' staff the farm. Equipment is supplied from Mr Kritsenger's farm and work carried out at just below cost. He visited the farm twice weekly to guide the management team during the first season. He continues to manage the financial affairs. The Farm now has sufficient retained profits to fund working capital of R900 000 and two small dividends of R300 per shareholder have been paid out.

All the fruit is packed in the farm packhouse at cost and marketed via SAFE. During the last three seasons they have had one good yield but with low prices, one year with hail damage and another year with low yields. In view of the market and growing conditions the farm has performed satisfactorily.

Conclusions

- **The low investment per farm worker has meant that there are too many shareholders if the farm is only going to be operated by shareholders.**
- **Under the new grant scheme the funding levels will be very significantly increased giving the opportunity for all the owners to be employed on the farm.**
- **With the low returns on farming big loans are not an option.**
- **Without the close financial and management support of Mr Kritsenger the farm worker-owned export farm could not have succeeded.**

Market research

How is it done?

- **Preparation of questionnaires**

Attached is an example of a **trader questionnaire** used frequently in markets. Section 1 covers questions to the trader about his business. Section 2 covers one of the important agricultural products in which he trades. Practically it is not advisable to gather detailed data on more than two products per trader.

- **Practice using the questionnaire**

It always helps to have tested the questionnaire before you start the full interview programme. This will establish whether the wording/questions needs changing and give the interviewer a chance to practise.

- **Plan a programme**

The interview programme should aim to cover the different market outlets in the production area (e.g. local markets, livestock auctions, transient traders) and in the towns (e.g. processors, National Produce Markets, wholesalers).

- **Review findings**

If you are working with a team, have a debriefing session afterwards, if you are working alone write up notes/findings after work.

- **Analyse the findings**

The interview findings need to be written up, in note form, as soon as possible. Use a table to compile the quantitative data.

- Let the data and the interview findings build up a picture of the **market opportunities** for the farmers in your area in terms **of products and potential players**. You will need to create an overview of the:
 - marketing channels used,
 - gain some understanding of how the market works,
 - what products are in demand,
 - how products need to be presented,
 - when is the best time to market,
 - consumer preferences, etc.

Farmer questionnaire

Date:.....

Section 1

Name

Location of farm

Brief description of the farm
(Type, speciality.)

Resources: area of your farm
(Total, farmed, irrigated.)

Do you own the farm, is it rented, leased or provided by local leaders?

What equipment do you use?

Access to water
(Distance, depth.)

Do you buy inputs?
(E.g. seed, fertilizer, etc.)

If so what and where do you buy it?

How many people work on the farm?
(Self, family and any hired workers.)

What are the main crops grown?
(Identify which are the main crops actually sold, rather than consumed, and the percentage (%) of total output of each product sold.)

How are crops/products sold?
(Visit by trader to farm, taken to local market or major market, etc.)

Discuss how the crop/products are sold
(How do they know what prices to ask for, what market/price information do they have?)

What are the main constraints restricting production?
(E.g. worried that the crop cannot be sold, labour for land cultivation, production, harvesting, supplies of seed, pests and diseases, transport.)

Have you had any problems selling your products? Yes No

Section 2

Product
(Select one or two products for more detailed investigation.)

A. Sources of supply

Total yield, by area

Do you use modern production techniques?
(E.g. improved planting material, irrigation pumps.)

Volumes sold daily, monthly, annually? Are sales increasing or decreasing

Seasonal supply.
(Start, peak and end of season in months)

Packing
(Weight of produce per packaging unit, type of packaging.)

Any grading and quality standards?
(Size, colour, moisture, variety, etc.)

Typical prices and range
(Average price, maximum and minimum prices, effect of different quality standards on price, variability between season.)

What are the main production problems with this crop?
(E.g. disease, pests, lack of water.)

B. Transport (for trader and farmer)

Whose responsibility is it to organise transport and how is produce transported to the market?

Who carries out the transportation?

How much is carried?
(Weight carried.)

What are the unit prices of transport to the different markets?

How good are the transport links, were there any recent improvements. Are there any improvements planned?

C. Packaging, storage and processing (farmer and trader)

Type and size of packaging material, who owns it, how much does it cost?

Storage arrangements, if any. Where, how and by whom?
(E.g. on farm, cooperative farmer group, in market, by end user, type cost)?

E. Business

How is the crop marketed at present?

Who are the most important: hawker, middlemen or buyers?

Which buyers have the best reputation?

Is there competition between buyers?

Do farmers provide credit to buyers?

When do buyers pay?

What are the main markets where produce is sold?

E. Recommendations

Is this crop profitable?

Is there opportunity for selling more products?

How can the profitability of the crop be improved?

Trader questionnaire

Date:.....

Section 1

Contact

Position

Name and address of business

Company history

When started, why started, who started, original activities, main changes.

Company ownership and turnover

Number of employees.

Company activities

Main products handled, who sells to whom, services provided (E.g. cold storage, collection, delivery, credit, packaging, grading.)

Company resources:

Transport, cold storage, wholesale outlets, retail outlets, crates, credit, bank account.

Procedure for doing business:

Do you collect, or is produce delivered, commission or fixed price, how/when are prices agreed, deductions, payment terms?

Products in demand or in short supply:

What products are needed in greater volume and when, product specifications, likely prices, (see product questionnaire).

Main customers:

Who do you sell to, are sales increasing, flat or declining?

What are your main difficulties as a business?

How do you want your suppliers to work with you?

Who are the major businesses trading in vegetables and potatoes?

Section 2

Product questionnaire

Product:

Volumes currently handled:

(Total per year, extreme monthly or weekly examples, and monthly sales.)

J F M A M J J A S O N D

Estimated total size of demand:

(Try to establish the overall volume of sales, and the relationship between supply and demand.)

Major suppliers:

(Their seasonal, unique selling points and do you experience any problems with them.)

Product specification:
(Variety, or description.)

Grading or quality standards:
(Degree of ripeness, colour, flavour, sizes, acceptable level of faults.)

Packaging:
(Type of packaging, size, net weight of produce, necessary printing.)

Is product stored before sale, if so for how long?

Typical prices:
(Buying selling, range, impact of seasonal.)

J F M A M J J A S O N D

Factors effecting sales:
(Is it a basic commodity, or a luxury?)

Sales trend:
(Are sales increasing, decreasing or flat over the last 2 to 3 seasons?)

Are additional/new supplies required for this crop?

When and how much of additional supplies are required?

Trader recommendations for new suppliers:

B. Transport

Whose responsibility is it to organise transport and how is produce transported to the market?

Who carries out the transportation?

How much is carried?
(Weight carried.)

What are the unit prices of transport to the different markets?

How good are the transport links, were there any recent improvements. Are there any improvements planned?

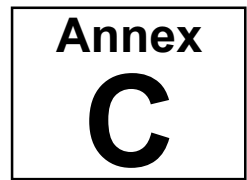
C. Packaging, storage and processing

Type and size of packaging material, who owns it, how much does it cost?

Storage arrangements, if any. Where, how and by whom?
(E.g. on farm, cooperative farmer group, in market, by end user, type cost)



Useful information



The ARC – Fruit & Wine Research Institute

Training and demonstration courses
Tel: (021) 809 3100
Contact person: Laetitia Moggee

CSIR

Training and demonstration courses
Tel: (012) 841 2649
Contact person: Matshidiso Tshidi Moroka

Rutech

Training of entrepreneurs
Tel: (011) 832 1036
Contact person: Any sales staff

New Farmers Development Co. Ltd.

Equity investor
Tel: (021) 975 1262
Contact person: Hannes le Roux

Khula Enterprise Finance Ltd.

Mortgage loan project
Tel: (011) 807 8464
Contact persons: Paul Zille, Don Mashele, Nomsa Maseko

Industrial Development Corporation (IDC)

Finance projects
Tel: (011) 269 3588
Contact person: Gary Clark

AfriCare

Support orientated production
Tel: (011) 403 3235
Contact person: Russel Hawking

Agrilink Project

U.S. Aid funded provide financial services
Project contractor: Enterprise Management & Innovation (EMI)
Tel: (011) 805 7822
Contact persons: Jaime Reibel, Simon Aphane
Queenstown, Eastern Cape
Ronald Ramabulana
Tel: (045) 839 2208
Cell: 082 768 6332

U.S. Aid

Tel: (012) 323 8869 X 221
Contact person: Darwin Stockdale