



Module 5

Harvest and Market Animal Products

Learner guide

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Dear Learner

This Learner Guide contains all the information to acquire all the knowledge and skills leading to the unit standard:

ID:	Unit standard title:
116307	Manage the quality of the harvesting of animal products
116278	Implement a food safety and quality management system in the agricultural supply chain
116684	Participate in the development and management of an agricultural marketing plan
119466(8972)	Interpret a variety of literary texts
119457(8969)	Interpret and use information from texts
119465(8970)	Write texts for a range of communicative contexts

You will be assessed during the course of your study. This is called formative assessment. You will also be assessed on completion of this unit standard. This is called summative assessment. Before your assessment, your assessor will discuss the unit standard with you. It is your responsibility to complete all the exercises in the Assessor Guide. The facilitator will explain the requirements of each exercise with you. You will also be expected to sign a learner contract in your assessor guide. This contract explains responsibility and accountability by both parties.

On the document “Alignment to NQF”, you will find information on which qualification this unit standard is linked to if you would like to build towards more credits against this qualification. Please contact our offices if you would like information with regards to career advising and mentoring services.






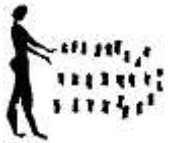

Peritum Agri Institute

Office: 051-4511120

Email: info@peritumagri.com

Enjoy the learning experience!

Key to Icons

	<p>Important Information</p>
	<p>Quotes</p>
	<p>Personal Reflection</p>
	<p>Individual Formative Exercise</p>
	<p>Group Formative Exercise</p>
	<p>Summative Exercise</p>
	<p>Activity</p>

Alignment to NQF

Element of programme	
1. Name of programme	Harvest and Market Animal Products
2. Purpose of the programme	Form part of the qualification to equip learners in Plant Production
3. Duration of the programme	5 days of facilitation; 240 notional hours
4. NQF level	4
5. NQF credits	24
6. Specific outcomes	See Unit Standard Guide
7. Assessment criteria	See Unit Standard Guide
8. Critical cross-field outcomes	See Unit Standard Guide
9. Learning assumed to be in place	See Unit Standard Guide
10. Essential embedded knowledge	See Unit Standard Guide
11. Range statement	See Unit Standard Guide
12. Recognition of Prior Learning (RPL)	RPL can be applied in two instances: Assessment of persons who wish to be accredited with the learning achievements Assessment of learners to establish their potential to enter onto the learning programme.
13. Learning Materials	Learner Guide, Assessor Guide with Model Answers, Facilitator Guide, Learner PoE Workbook
14. Links of the programme to registered unit standards, skills programmes, or qualifications	Registered qualification: Title: National Diploma: Plant Production ID: 48979 Credits: 163

Learning Unit I

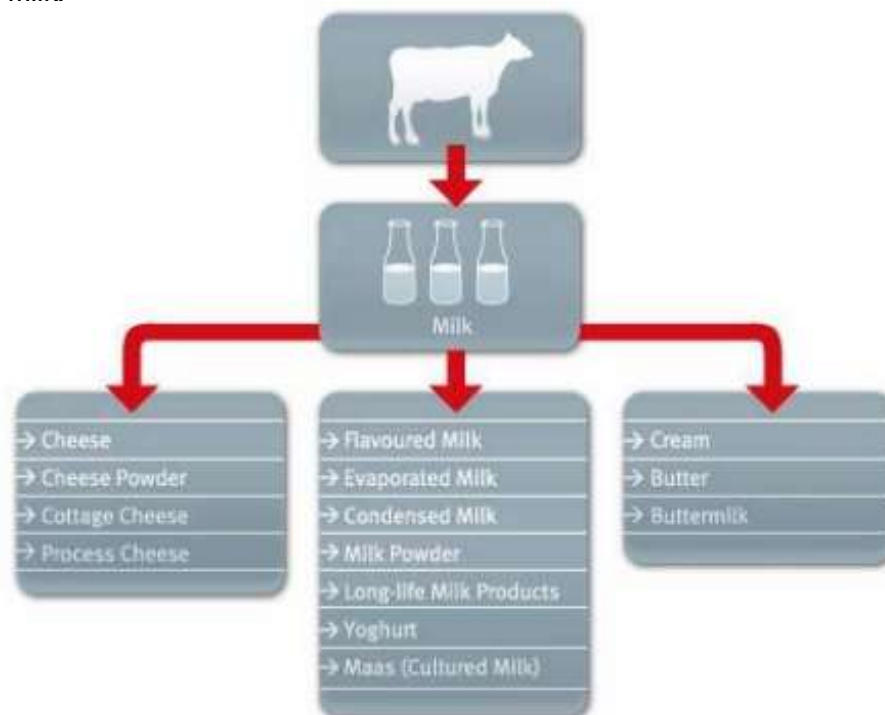
Harvesting Animal Products

Unit Standard	
116307	Manage the quality of the harvesting of animal products
Specific Outcomes	
<p>SO 1: Investigate animal product processing systems with regard to quality issues.</p> <p>SO 2: Communicate evaluations and findings regarding processing systems and the quality of harvested animal products processed by such systems to superiors.</p> <p>SO 3: Suggest alternative practices or quality control systems that will ensure retention of product quality.</p> <p>SO 4: Maintain systems implemented to ensure animal product quality.</p> <p>SO 5: Describe the basic biological and behavioural concepts that will illuminate the geographical, traditional and historical distribution and use of the animal.</p>	
Learning Outcomes	
Identifying	Science
Organising	Communicating
Demonstrating	Contributing
Collecting	Working

Quality Issues














Introduction: Why quality?

Animal production provides human society with a myriad of useful products. However, these products are not only provided to the consumer in their raw form, they are often processed in some manner. Processing changes the raw product in some way that may be more convenient for the consumer, it may make the product safer for the consumer to consume, or it may make the product more attractive to the consumer. The diagram below shows all the dairy products that can be made from cow's milk. Other products such as cosmetics and soap can also be made from cow's milk.




Individual Activity I

Value-adding or processing requires inputs, equipment, infrastructure and safety. This means that if you add these things to a raw product a secondary product is produced. Let's see what this means. We'll make a sandwich together.....

Our inputs are:	 Bread	 jam	 Butter	 Our skill or labour or idea
Our equipment is:	 A Knife	 A bread board	 A cloth	
Our infrastructure is:	 A table			
The PROCESS is:	 We slice the bread	 We spread the butter	 We open the jar of jam	 We spread the jam
The final product is:	 A SANDWICH!			

Thus, the making of the sandwich is the PROCESS by which we change the inputs into the final product utilising the equipment and infrastructure. We are, through our labour and the use of various inputs, equipment and infrastructure, adding value to our raw ingredients (in this case the “raw ingredients” are secondary products of agriculture: bread, jam and butter – products from value-adding to the primary products wheat, fruit and milk)



Individual Activity 2

From Activity 2 it becomes clear that all consumers have certain quality expectations from agricultural products. Quality characteristics may refer to colour (sight), flavour (taste), texture (touch), smell (nasal), strength, tenderness, and so on.

Most importantly, when considering food products, safety is an important consideration by consumers. This is because, each year, an estimated 76 000 000 people experience a food borne infection in the United States; 325 000 are hospitalised and 5 000 dies. The annual patient-related costs of just the principal bacterial and parasitic food borne infections have been estimated at \$6,5 billion or more (Buzby and Roberts, 1996). To this can be added lost wages, product recalls and other social costs.

Among the established food borne infections, bacterial infections account for an estimated 30% of cases, 63% of hospitalisations and 72% of deaths. Five food borne pathogens namely;

- E. coli 0157: H7;
- Salmonella;
- Campylobacter;
- Listeria; and
- Toxoplasma,

Together the above cause an estimated 35 000 000 cases; 33 000 hospitalisations and 1600 deaths each year.

Effective control of many food borne infections ultimately depends on designing food production and processing for safety.

Attributes of Product Quality: What is quality?

Before quality is addressed, the term should be clearly defined as it can differ from product to product. This is a difficult task, because quality is a personal perception and sometimes subjective. The definition of quality is: “The degree to which a set of inherent (existing) characteristics fulfils requirements”. When you refer to the quality of a food product you look at factors such as:

- Eating / drinking quality (appearance, texture, flavour)
- Convenience (availability, ease of preparation)
- Stability (shelf-life, quality retention)
- Wholesomeness (safety, purity)
- Nutritive value (nutrient content, nutrient availability, caloric value)



Individual Activity 3

Gathering Quality Data: Quality control

How can the raw product producer or the secondary product processor ensure that the products that he produces meet the consumer's demands? Farmers and processors must produce products that meet certain quality standards. In South Africa there are very clear standards for the quality of meat, milk, fibre (mohair, wool, and cashmere), eggs, leather etc. Various indicators or indices are used to measure quality. When quality is measured and the results of this measurement are assessed and acted upon, we are busy with the process of Quality Control.

Quality control can be defined as: "The degree to which control is measured against predetermined requirements (quality)." Quality Control has been with us for a long time. It is safe to say that when animal product harvesting began and competition accompanied product processing, consumers would compare and choose the most attractive product. For example: producer A discovered that producer B's profits soared, the former tried to improve his/her offerings/production, probably by improving the quality of the output, and/or lowering the price. Improvement of quality did not necessarily stop with the product - but also included the process used for adding value to the product.

Factors that Affect Quality

Many factors influence product quality. Some of these factors are:

On the farm:

- Animal
- Personnel (handling of animals)
- The facilities e.g., milking parlour/ abattoir
- Handling and storage rooms
- Equipment and materials
- Quality of cleaning and washing
- Cooling and storage of products
- Delivery for collection

Transport:

- Cleanliness and condition of transport vehicle
- Temperature during transport

- Duration of transport
- Unloading and reception methods

At Processing Plant:

- Overall cleanliness and condition
- Personnel
- Storage time
- Handling and processing
- Packaging and labelling (production and best before dates)
- Storage
- Loading and transport for distribution

Distribution and resale:

- General cleanliness and condition
- Storage time
- Storage temperature
- Methods of handling, distribution and sale



Factors that Affect the Quality of Milk

Many food products present a favourable physical environment for the multiplication of micro-organisms. For example, milk is a highly nutritious substance, and thus provides a favourable environment for the growth of micro-organisms especially at temperatures above 16° C.

Micro-organisms are living organisms which are too small to be seen with the naked eye. These organisms are found everywhere: in the air, water and the ground. Many micro-organisms cause disease in people and animals while others are beneficial and even necessary for human and animal life.

“Micro-organism” is the term applied to all small living organisms. Three main types of organisms found in milk and milk products are:

- Bacteria
- Yeasts and
- Moulds

In dairying, some micro-organisms are harmful as they may spoil milk and milk products. Some are pathogenic in that they can be harmful to the health of humans. Bacteria are the most numerous of the milk organisms. Even if production is done aseptically from the animal, contamination can occur thereafter. Bacteria can enter the milk through:

- The animal
- From the air
- From animal feeds
- From the milker
- From the milk container



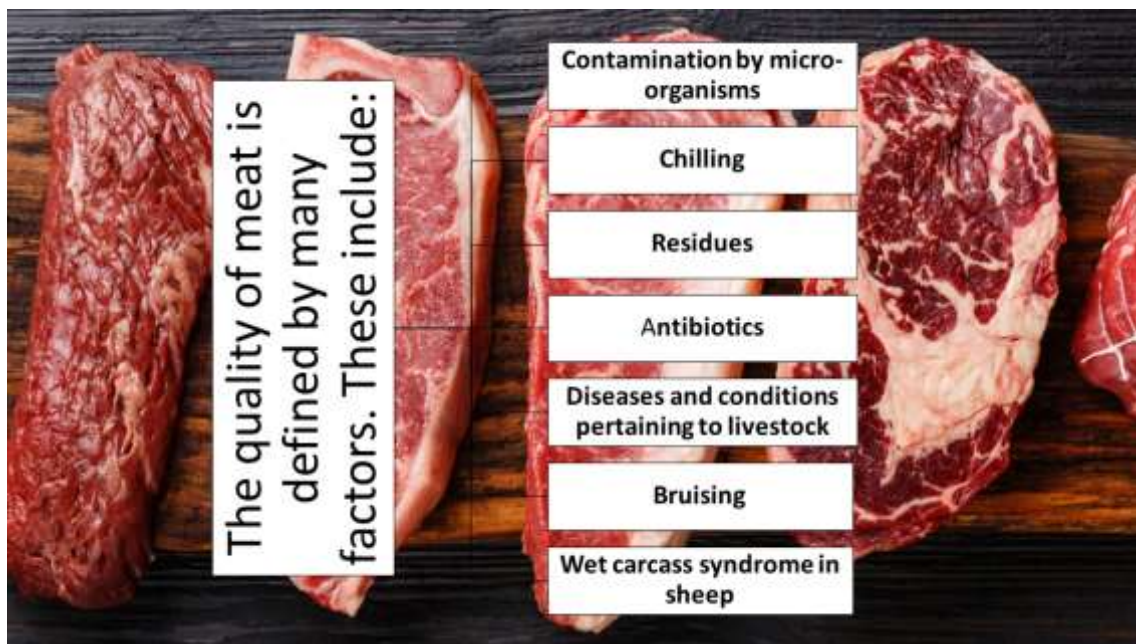
Once micro-organisms have entered the milk they grow quickly and once they are established they are difficult to remove.

Milk drawn aseptically from a healthy udder contains less than 1000 bacteria/ml. There is considerable variation in the number of organisms found in milk at different stages of milking. During the milk harvesting process, bacteria from various sources may enter the milk. During storage, even under refrigeration, these bacteria will multiply further.

Cooling of the milk prevents the growth of most types of bacteria to a considerable degree. If milk has to be stored for 12 - 18 hours only, cooling down to 8° C is enough. If milk must be stored for one day or longer, cooling down to 4° C is necessary. Micro-organisms can be killed by pasteurization. This is done by heating the milk to 72° C for 15 seconds.

Factors that Affect the Quality of Meat

As demonstrated above, food quality cannot be defined as the absence of high microbial numbers alone, attention should be paid to those factors to which human beings respond, e.g.: changes in colour or texture, pH, concentrations of volatile sulphides, fatty acids, toxins and allergens.



Thus, the quality of meat is defined by many factors. These include:

Contamination by Micro-Organisms

Bacteria gain access to a carcass in the following ways:

- Deep infection - the invasion of the musculature, via blood and lymph circulation. Such bacteria arise from either the intestinal tract which can infect the liver via the portal system or by the throat cut to cause the animal to bleed to death, allowing bacteria to enter the circulation system.
- Contact or surface bacteriological contamination - the bacteriological load applied to the exposed surfaces of the carcass during the process of dressing and subsequent handling.

In general, the micro flora on the meat will be that of the external surfaces of the animal, contaminating the meat by direct contact through air, water, soil, manure and the hands and tools of the worker.

Three critical factors which influence the microbiological status of meat are:

- The microbiological status of the animal at slaughter
- The extent of transfer of micro-organisms to the meat during slaughtering and
- The temperature, time and other conditions of storage and distribution.

The main sources of contamination are:

- The slaughter man's knife after the opening lines
- The hands and forearms of the slaughter man.
- Contact between freshly exposed surfaces of the carcass and dirty hides, fleece or slaughtering surfaces.

Chilling

In general, low temperature preservation adds nothing to the quality of the final product. Its aim is only to slow down or arrest the micro-biological, biochemical and other effects that lead to spoilage. The quality and safety of the final product are determined by the initial quality of the muscle, hygiene standards during dressing and processing, temperatures throughout processing operations and finally the duration of and environmental conditions during the chilling and storage phase.

It is about the chilling stages that conflicting factors with regard to safety and quality often exists. Current regulatory stipulations for both local and export requirements stipulate a deep bone temperature of 7° C. Spoilage due to bone taint is unlikely to occur at this temperature. Low temperatures with high air velocities to obtain this temperature do however greatly increase the possibility of cold shortening, resulting in tough meat. Chilling procedures do not prevent the activity of spoilage organisms, which can grow at about 7° C however, temperatures below 2° C will delay the onset of slime formation. Control of the relative humidity in chill rooms, e.g.: reducing the amount of water activity, can reduce bacterial spoilage, but results in a loss of carcass weight and liability to spoilage by psychotropic bacteria and some moulds.



Residues

Agricultural chemicals and animal remedies are used extensively in SA to control pests and parasites in crops and to prevent and control diseases in livestock. These compounds may be taken up in the food chain and may therefore be in concentrations higher than the permitted maximum residue levels (MRL) safe for human consumption. The results below show the percentage of meat samples that tested positive for various residues during the 1997/1998 period:

Antibiotics

NATIONAL AGRICULTURAL MONITORING SCHEME		
<i>Results for the period 1997 - 1998</i>		
Species	No tested	% positive
Bovine	2842	14
Mutton	231	12
Poultry	371	56
Ostrich	366	18
Pork	360	55

- Organochlorines: 22 tests out of 963 were above the maximum residue limits
- Heavy metals: 3 tests exceeded the maximum residual levels.

National residue programmes conducted by Veterinary Public Health Authorities are currently used to verify the prevalence of residues and to provide health assurances to the local and international market. The responsibilities in this regard should rest with or at least be shared by the producer.

Drug residues in food produced by animals may result in either systemic toxicity, reproductive toxicity, genotoxicity, carcinogenicity, immunotoxicity, antimicrobial or pharmacological -effects following consumption in man. These effects may be acute or chronic in nature. An effective residue monitoring programme is essential for the control of residues in meat. Laboratory analyses are also used to provide information on both individual cases and screening tests to detect the presence of residues.

Diseases and Conditions Pertaining to Livestock

The following conditions identified at the abattoir are not only related to the handling of the livestock or the product at the abattoir but are the result of a combination of factors which originated on the farm or on its way to the abattoir:

- DFD in cattle (Dark cutting meat)

The muscle cells in the carcass of a slaughtered animal continue living for a while by using stored glycogen for energy. This glycogen is converted to lactic acid which causes the acidity in the muscles to increase and thus the pH to fall. Normal lamb and beef carcasses reach an ultimate pH after 24 - 36 hours (10 hours for pork). Without glycogen reserves to break down after slaughter, the following changes will occur:

- muscles become stiff almost immediately after slaughter
- these muscles look black
- are very firm and
- retain water

This is referred to as **Dark Cutting Meat (DCM)**.

Dark Cutting Meat is usually identified only during the processing stage and for this reason the incidence of the problem is not always certain. International literature does however suggest that the cost to the beef industry may be as high as R20 - R30 for every feedlot animal slaughtered.

Causes of DCM

The two main factors responsible for DCM are EXERCISE and STRESS. During exercise and/or exposure to stressful conditions, animals use up their muscle glycogen. This causes the ultimate pH to become progressively higher.

The following are examples of factors that might induce DCM:

- disease
- fever
- strenuous exercise
- mounting behaviour
- fighting for social dominance of unfamiliar animals
- being put in an unfamiliar situation
- injury
- change in weather conditions
- nervous excitement

The stressors have their effect over a prolonged time before slaughter, usually more than four hours. DCM is not an all-or-nothing phenomenon and can occur in various degrees. At the same time, it is often a combination of factors leading to the occurrence of DCM. Not all animals respond equally to these stressors.

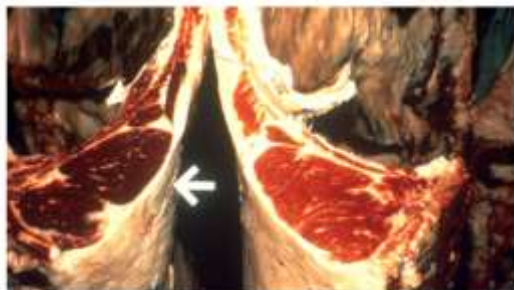
Problems caused by DCM

Appearance: DCM appears unattractive. This dark appearance is often associated with old animals or with meat that has deteriorated.

Sensory problems: DCM has a changed flavour profile and is sticky

Tenderness: The development of tenderness during aging is markedly slower in meat with an ultimate pH between 5.8 and 6.2. Meat in this pH range will be tougher.

Spoilage: At higher pH values meat tenderization becomes very rapid, but this meat has a poor texture, poor cooking qualities and undergoes rapid spoilage.



Problems caused by DCM

- Appearance
- Sensory problems
- Tenderness

Determination of DCM

Extreme dark cutters can be identified by the appearance and feel of the cut meat surface. Ph measurement 16 - 20 hours after slaughter accurately identifies the high ultimate ph responsible for DCM. Electrical stimulation immediately after slaughter can result in the meat reaching ph levels of 5.8 in about 2 hours.

Prevention of DCM

The following factors are important to reduce the incidence of DCM:

- Strange animals should not be mixed shortly before slaughter.
- Animals should be well rested before being presented for slaughter.
- Stunning should be effective: Similarly, the handling prior and during stunning should be in a calm manner.
- Cattle should be transported in vehicles specifically designed to prevent unnecessary stress and injuries.
- Water should always be available to cattle during the waiting period at abattoirs prior to slaughter.

Bruising

The incidence of bruising of cattle and the consequent loss to the industry remains a serious concern to the meat industry. The really bad news is that bruises have probably stayed at the

same level on a national basis during the last two decades and will remain that way unless measures exist to stop the current lack of accountability. Although the producer is currently not compensated for these trimmings, unless cattle are bought on the hoof, it is also not reflected in the payment as being condemned for this specific purpose. Surveys conducted have indicated that trimmings for this reason may be as much as 0.6 kg per carcass resulting in a loss of R 6 million rand per annum considering that part of these trimmings may be utilised for by-products if such a facility is available. Unfortunately, this is not always the case with decentralised slaughter facilities.

Wet Carcass Syndrome in Sheep



Ovine wet carcass syndrome is a condition characterised by a wet shiny appearance of a carcass due to the accumulation of a watery fluid in the subcutaneous and other connective tissues of the carcass. Affected carcasses have poor keeping qualities and are also aesthetically unacceptable to the customer. Losses due to this condition because of condemnation or trimmings have a seasonal incidence of enormous proportions in the sheep industry. Although this condition was researched and investigated during the last 15 years, it can be concluded that many factors influencing the food and water intake of sheep over an extended period prior to slaughter, may induce this condition.

They are:

- Chronic ketosis during the week or days prior to slaughter.
- Source of energy and feeding patterns during the feeding period.

- Water deprivation patterns prior to slaughter.
- Rest periods before slaughter.
- Undue stress because of transport and handling prior to slaughter.

The interstitial fluid of wet or oedematous carcasses show the following significant changes compared to normal ovine interstitial fluid:

- Total protein content (g/l) (14 vs. 52)
- Albumin to globulin ratio (3.2 vs. 1.5)
- Osmotic pressure (mm Hg) (3 vs. 9)

Ovine wet carcasses can be prevented or at least controlled taking the following into consideration:

1. Slaughter sheep should only be restricted from water during transport periods.
2. Slaughter sheep must be rested overnight or (at least) for 8 hours prior to slaughter.
3. In the case of sheep subjected to poor feeding, this rest period may be lengthened with access to roughage 2 to 4 days prior to this period.
4. Chilling period of suspect cases should be lengthened with an additional 8 - 12 hours under optimum conditions e.g., air speed.

Although the development of ovine wet carcasses is of a multi-factorial nature with an underlying nutritional basis, the resolution lies with both the producer and the abattoir industry to limit the condition to an acceptable level.

Ovine wet carcass syndrome

Watery fluid in flank area



Subscapular area with fluid accumulation



Factors that Affect the Quality of Non-food Products

The quality of non-food products such as fibre and leather can also be negatively influenced. The correct procedure for maintaining the quality of leather from the flaying of the animal carcass is provided later in this module.

Methods to Ensure and Improve Quality of Agricultural Products

Procedures were established, in general, aimed at the maintenance and improvement of the quality of the process of value-adding. In modern times you have professional societies, governmental regulatory bodies (such as the FAO, RPO, WHO), and factory inspection systems, aimed at assuring the quality of products sold to consumers. These are called Quality Assurance Systems, Processes, Procedures, Regulations or Guidelines.

The last decade has witnessed several encouraging trends in the thinking of food safety.

First, it has become clear that the responsibility for food safety is not only up to Government or the abattoir owner but evenly distributed along the entire food chain of production, and does not reside solely with the final consumer.

Secondly, new strategies have been adopted that engineer safety into food products, such as Hazard Analysis Critical Control Point (HACCP), Good Manufacturing Practices and Good Agricultural Practices. Food borne diseases remain an important challenge to public health, thus causing a major burden of illness and requiring substantial resources for their control and prevention.



- In modern times you have professional societies, governmental regulatory bodies and factory inspection systems, aimed at assuring the quality of products sold to consumers
- **These are called Quality Assurance Systems, Processes, Procedures, Regulations or Guidelines**



New active surveillance strategies can provide better data on the burden of illness and can track trends in the incidence of specific diseases as prevention improvements such as HACCP systems are implemented. Although the principles of HACCP have been known for more than 20 years, within most food companies little was known on this subject. Furthermore, legal requirements for HACCP in Europe-EC Directive 93/43 (EEC, 1993) and USA (FDA, 1995) meant the principles of HACCP and training of HACCP skills had to be put in place in a relatively short period of time (De Winter, 1998). With the promulgation of the Regulations of the Meat Safety Act, Act 40 of 2000, the implementation of food safety systems such as Good Manufacturing Practices (GMP), Hazard Analysis Critical Control Points (HACCP) and Hygiene Management Systems (HMS) has now become a requirement in the abattoir industry.

Most of these systems or guidelines have been developed in such a manner that they can assist a practitioner to move through a procedure which can reduce the process variability or to identify specific problems in the process. However, other methodologies may need to be developed to allow for sufficient customisation to a certain specific process. As a start, these tools can be utilized to ensure process maintenance and improvement. They include:

- Analysis
- Improvement
- Monitoring
- Implementation

Furthermore, it is important to note that the mere use of the quality control tools does not necessarily constitute a quality program. Thus, to achieve lasting improvements in quality, it is essential to establish a system that will continuously promote quality in all aspects of the value-adding operation. Principles of quality control include:

- Defining quality
- Quality control
- Measuring quality
- Analysing quality
- Methods to evaluate quality
- New techniques for improving quality

These methods vary from rapid platform tests to more sophisticated and time-consuming analysing methods including, e.g., microbiological quality tests.

However, the scope and quality of quality control and methodology depend greatly on the size of the production unit, volume of production and the product mix. Small processing systems, producing only one product, start with limited production capacity and must rely on less sophisticated quality control methods. However, the quality control methods used should be reliable and cover the most essential quality criteria like hygiene.

The quality control standards and methodology used should be under continuous evaluation and development according to increases in and diversification of production and improvement of processing methods.

There are hundreds of food safety hazards and prioritising them according to the type of product, process and end use, an effective, practical and economical safety management system can be developed. When analysing the hazards, the risks can be assessed by determining severity, incidence and onset.

The Inspections at an Abattoir

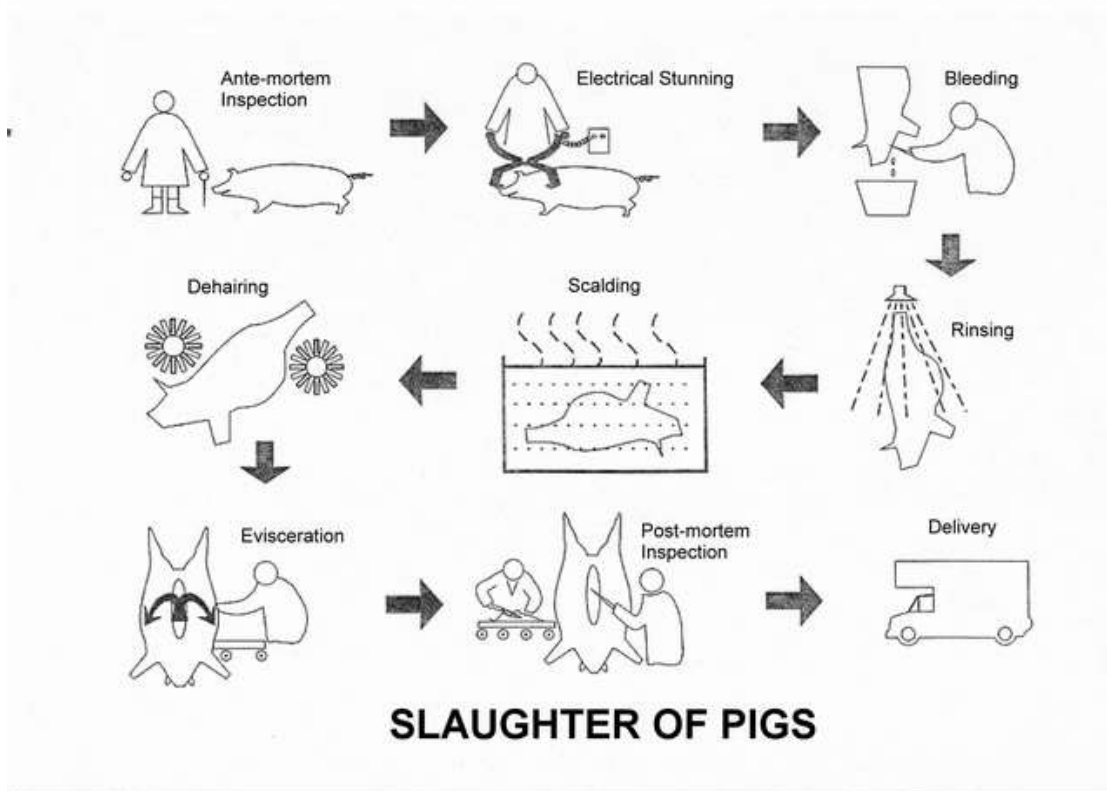
At an abattoir meat inspection forms an important part of quality control:

- To ensure that only apparently healthy, physiologically normal animals are slaughtered for human consumption and that abnormal animals are separated and dealt with accordingly.
- To ensure that meat from animals is free from disease, wholesome and of no risk to human health.

Therefore, specific inspection procedures are followed to minimise contamination. Meat inspection should be seen as an integral part of the slaughter and production process and is not regarded as an end product inspection. It consists of the following aspects:

- Ante-mortem inspection
- Primary (on the line) inspection
- Secondary meat inspection of detained carcasses or organs
- Laboratory analysis including screening procedures

A final decision about a carcass or part of one must be based on all the information obtained from these ante-mortem inspections, visual inspections, palpations, incisions, smells and laboratory analysis forthcoming from these procedures.



The following areas of concern are addressed during this process. An ante-mortem inspection is the first opportunity to:

- recognize and have removed those animals that cannot be converted to a wholesome product or may act as a possible source of contamination
- identify and slaughter separately animals suspected of being affected by a disease that might render the carcass or part of it unfit for human consumption
- gather information of importance for the evaluation of the carcass during meat inspection. Examples are Rabies, Tetanus, diarrhoea and abscesses

A routine meat inspection remains the most important way to identify and remove pathology and abnormalities, including contamination that poses a threat to both the safety and quality of the product. The judgement of carcasses and organs are based on:

- the severity of the lesions
- the causes thereof
- and the duration of the lesions.

Provided care is taken in the interpretation of results, microbiological examination of meat is of value in the assessment of wholesomeness, of hygienic methods adopted during slaughter,

dressing and processing and of the efficiency of methods of preservation. It can also indicate the potential shelf-life and identify potential health hazards.

The bacterial status of meat is determined in superficial and deep samples. Superficial samples may be taken by removing thin slices, by rinses, swabs or adhesive tape, or by the agar sausage and impression plate techniques. Deep samples of meat must be taken with care in order to avoid superficial contamination. They can be obtained using sterile scalpels and forceps or, in the case of frozen meat, a cork borer or an electrical drill fitted with a bore extracting bit.

Although microbial counts have been made the basis of food microbiological analysis, they are defective indicators for the following reasons:

- bacteria in food are not stable like heavy metals; their populations vary constantly
- food usually contains a variety of micro-organisms, some or all of which may enhance or inhibit each other
- time of sampling, usually at plant or retail shops, gives no indication of the final microbial count in the consumer's home, long after sale
- the number of organisms or amount of toxin or allergen which affects man is not known
- environmental conditions, e.g.: temperature, pH and type of sampling, markedly influence bacterial growth
- counting microbes is a cumbersome procedure

The following areas are examples of control areas (not always critical control points) at the abattoir to eliminate or reduce poor meat quality:

- Assessment of the transport used for animals to the abattoir
- Ante-mortem inspection of livestock
- Compulsory resting periods for slaughter stock
- Measures to ensure the cleanliness of slaughter stock
- Meat inspection
- Slaughter processes and control measures to reduce the possible contamination of meat with the external skin/hide surfaces.
- Routine and specific laboratory diagnostics to confirm disease conditions or residues.
- Chilling

The Inspections on a Dairy Farm

Platform tests or milk reception tests are the commonly used names for the tests carried out by the persons responsible for raw milk collection and/or reception. The tests in question are rapid quality control tests - organoleptic tests being of great importance.

This is important from the point of view of processing and quality of end products, because one single lot of milk of poor quality can spoil the rest of the milk it is mixed with.

Application of platform tests does not directly involve laboratory analysis of raw milk samples but in suspected cases a sample from milk should be taken to the laboratory for further inspections for quality. This lot of milk should be taken aside and not mixed with bulk milk to verify its quality.



At milk reception sites - during milk collection and reception at milk plant - the platform tests can be applied as follows:

Organoleptic tests:

- The appearance of the surface of the milk and the lid is observed (Any abnormal colour of the milk)
- Any abnormal smell

Lactometer test (determination of adulteration of milk by adding water):

- If the milk appears to be too thin and watery and its colour is "blue thin" it is suspected that milk contains added water.

Alcohol test (rapid determination of elevated acidity of milk)

- Any reason to suspect that milk is sour.
- If the result of alcohol test indicates too high acidity in milk a sample from milk is to be taken to the laboratory for further testing of titratable acidity.

One of the most important tasks of quality control is to control and follow up regularly the fulfilment of quality standards at every stage of the process flow to guarantee the best possible quality of end products.

The Quality of Harvested Animal Products

Introduction

All food manufacturers have a responsibility to ensure that quality assurance systems are in place to provide the final consumer with a product that is safe and wholesome to eat (Axtell and Fellows, 2003). As a supervisor or manager in a production unit or processing plant, it is your responsibility to ensure that the product leaving your facility is of the highest quality to be able to satisfy the discerning demands of the consumer. Any breach in quality will have serious consequences for your establishment. These consequences may include: loss of sales, loss of customers, cost of product recalls, and costs of wasted transport costs, law suits or fines. Thus, quality control and continuous and dedicated attention to all aspects of product quality should be a matter that is discussed with superiors daily.

Evaluate the Quality of Animal Product

The impact of various procedures, systems and methodologies on the quality of animal products is evaluated

Quality control includes a wide range of and scope of activities to be carried out regularly. The ultimate task of quality control is to provide you, who are responsible for quality, with information such as the areas of highest risk, the source of a likely hazard, the quality criteria and standards that should be maintained, and methods to prevent the hazard from reducing this quality objective.

Any breach in quality will have serious consequences for your establishment

- These consequences may include:
 - Loss of sales
 - Loss of customers
 - Cost of product recalls
 - And costs of wasted transport costs
 - Law suits or fines



Early warning about failures and inability to meet quality standards at any stage of the production or value-adding process will help you to correct the situation in time and decrease losses caused by irrelevant quality of the product.

The best way to manage the quality of products is to establish a system wherein you can monitor and control hazards. The concept is to ensure the most efficient and effective sanitary control. Systems were designed to prevent problems by making sure controls are applied at any point in food production systems where critical situations could occur. These systems included TQM, QES, EUREGAP, HACCP, etc. First of all, you should identify the threats that could damage animal products for human consumption.

These threats can usually be grouped as follows:

Biological Threats

Living organisms that make products unsafe for consumption. It can be introduced during processing by people involved in processing, from environment in which processing occurs or from other ingredients in the product.

Chemical Threats

- Occurs naturally in products.
- Added during processing.
- Added to food during growth, harvesting, storage, processing, etc.

Physical Threats

- Foreign material (piece of equipment).
- Contaminated raw materials.
- Poorly designed facilities and equipment.
- Contaminated packaging.



Identify the threats that could damage animal products for human consumption

These threats can usually be grouped as follows:

- Biological threats
- Chemical threats
- Physical threats

After you had identified the threats you need to find the control points:

- You should find points in the process where preventive measures could be applied.
- Some points where control can be applied include:
 - Inspections for contamination before shearing/ slaughter
 - Chilling to temperatures that minimise microbial growth
 - Slaughter procedures
 - Processing procedures

After you had identified these critical points, you need to find ways to control and maintain these points.

How to Monitor these Procedures

- Monitor that the procedure is carried out routinely and create a record for future use.
- Monitoring procedures include observations
- Make sure that the procedure is efficient and accurate
- Provide rapid feedback

To set up a quality control system for your production or processing facility a risk assessment should be carried out for each of the products that are produced (Axtell and Fellows, 2003). It should be remembered though that a manufacturer's responsibility does not end when the product leaves the production unit. Poor control in the transport and retail chain can result in quality problems that may cause consumer complaints. In law, the food manufacturer may be able to claim that illness due to eating a product is the result of the retailer failing to keep the food at the correct temperature or the consumer using the product after its use-by date. However, any complaint will damage the name and image of the producer and may place the future of the enterprise at risk.


The following is a simple Risk Analysis for biltong (Biltong is considered a high-risk meat product because it is eaten raw without further cooking). Notice that the risk analysis goes beyond the manufacturer's production unit.

Where Risk Occurs	Hazard Sources	Possible Actions
In the production unit	The greatest risk is cross-contamination from raw meat either by direct contact or by worker contact. Other risks include poor "first-in-first-out") stock control and poor heat sealing of plastic packaging.	Implement systems that ensure cross-contamination cannot occur. Check that all products are fully dried. Check heat seals.
In the transport chain	Poor handling can result in packaging being perforated and allowing moisture pick-up. Products transported with another hazardous material can become contaminated.	Pack bags in strong, sealed cartons. Explain how you want the product transported. Use a reliable transport company even if a little more expensive.
At the point of consumption where the biltong is placed in bowls on the bar as a snack	Contamination due to flies or to people not washing their hands after using the toilet. The possibility that any biltong left over at the end of the day will be put out again the next day.	Control solutions become difficult at this distance from production. However, provide advice by visiting your consumers and labelling your product. for example, suggest that proprietors only put small amounts in bowls to minimise customer contamination or provide

		individual snack plates to customers.
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The objectives of a Risk or Hazard Analysis, known as the hazard analysis and critical control point (HACCP) system, are to identify:

- Where the hazards occur
- The nature of the hazards
- Potential solutions to minimise risks that might damage the consumer or cause complaints



Individual Activity 4


Cost/Benefit Analysis

Cost/benefit analysis regarding the effect of such processes and procedures are developed.

Once the methods to mitigate or prevent the risk have been established it is important that you ascertain whether the benefit accrued is more than the cost to implement the control. When suggesting an improved methodology for controlling risk to a superior, it is advisable that the cost benefit be presented also. Look at the following example of a cost-benefit analysis in a sausage making plant:

Where Risk Occurs	Hazard Sources	Possible Actions	Potential Cost Benefit
At the meat grinding (mincing) machine	The operator of the mincing/grinding machine picks up the chunks of meat with his/her hands to place in the grinding machine. If the operator's hands are dirty, then the risk of	Possible action 1: The operator should wash his/her hands with antibacterial soap and rinse and dry his/her hands between every lot. Possible action 2: The operator should wear new disposal	An operator makes 50kg batches of ground mince to go on to the sausage maker. At R 30/kg this means 50kg x R30/kg = R 1500. If a batch is contaminated with bacteria such as Salmonella, then R 1500 could be lost. Additionally, if the


	contamination between different sausage lot	plastic gloves for each batch.	sausage were to cause illness among a wide group of consumers the loss in revenue due to the poor reputation of the manufacturer could have even higher financial losses. The cost of one bottle of antibacterial soap is R 15. The cost benefit of this control method is thus R1485 or 100 times the cost of the control.
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Individual Activity 5

Communication

Relevant communication to demonstrate and motivate the implementation of changes in the processing of animal products is developed and produced.



Individual Activity 6

Knowledge regarding quality in the processing of animal products is applied



Activity 7

Alternative practices or quality control systems



Individual Activity 8

Ensure Animal Product Quality

Introduction

To be able to implement and maintain a quality control system in an animal production unit or a processing unit requires an intimate knowledge of the various steps of the process through which the product is produced or manufactured. Without knowledge of every step in the production process it will be impossible to identify where risks to quality may occur or how those risks can be prevented or reduced.

Knowledge of Animal Harvesting

A complete knowledge of the animal product harvesting and processing system is demonstrated

The following section demonstrates the knowledge regarding the correct flaying of a carcass:

The factors which determine the suitability of a tanned hide or skin do not start with the curing process, but with the removal of the hide or skin from the carcass. Once it has been removed from the carcass, the handling it receives immediately thereafter is of vital importance for the retention of quality. The final shape of the hide or skin is more important than most people realise. The value of the processed hide or skin depends on the way in which the cutting lines are made on the carcass.

The preparation begins with flaying or the removal of the hide or skin from the animal after slaughtering, followed by curing of the hide or skin by the addition of salt to dry and preserve the material until it can be processed further into leather. By carefully following the various

preparation steps the value of the leather can be conserved. The correct preparation steps are discussed below.

Slaughtering and Flaying

Slaughtering should be done early in the morning or late in the afternoon when the temperature is low, and the air is cool to prevent bacterial growth on the hide or skin. It is also important to bleed the animal well after slaughter, otherwise the blood stays behind in the skin and the blood veins will show in the grain surface of the leather. This can also happen when dead or very old animals are slaughtered. Poor handling of carcasses after slaughtering can also damage the skin.

Ripping Lines

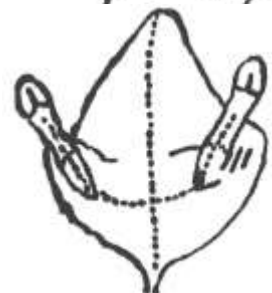
These are the cutting lines along which the skin is to be removed from the carcass. When the wrong lines are used, the value of the skin is reduced.

The right ripping lines are shown in the figure to the right.



Hints on Removing the Skin

Blood should be drained from the carcass taking care that the minimum amount of blood contaminates the skin or meets the hide or the skin. This will discourage bacterial spoilage. Use a sharp flaying knife with a rounded blade to avoid bad flay cuts on the hide or skin. Do not use the flaying knife where it is possible to simply pull the skin from the carcass. However, pulling too hard will result in “butchers strain” marks on the leather.



Remove the hide or skin from the animal immediately after slaughter and allow the hide or skin to cool off in a clean place out of the sun and off the ground to prevent bacterial contamination. Blood and dirt on hides and skins can be washed off with clean cold water.

Curing

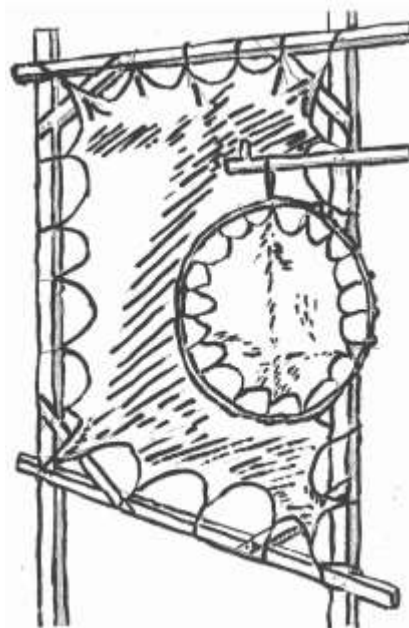
The aim of curing hides and skins is to make them resistant to bacterial attack. They can then be transported or stored until the tanner is able to process them. There are three methods commonly used for salt curing hides or skins, which are as follows.

Wet- salting

Cover the flesh side of the hide or skin with salt and stack the skins in a pile. The salt takes up the water inside the hide or skin and draws off a mixture of blood and water. Most bacteria will not increase in numbers in very salty water.

Dry salting

The salted hide or skin is hung in the shade to dry or dried in hot air in tunnels where the climate is wet. Dry salting is usually carried out in places where salt can be bought, but storage and transporting of wet salted hides is difficult. The method of application is the same as for wet salting. After the minimum treatment period of 48 hrs where the hides or skin have been in contact with the salt, the loose salt is shaken off and the hides or skins are then dried by hanging symmetrically along the line of the



backbone over horizontal poles with diameters not less than 7 cm. The hides or skins are placed initially with the flesh side uppermost on the poles for drying and then turned over with the hair side uppermost to complete the drying on the wool/hair side.

Air-drying

If it is difficult to get salt for curing, the skins can be dried by air, but only in dry climates. The skins should be dried in the shade, with sufficient air movement otherwise the outside of the skin will dry too fast, leaving the inside wet and the skin will rot on the inside. They can be hung over poles as described for dry salting or the skins can be stretched with strings from all sides in the frame to let the skin dry uniformly, as shown in the figure to the right.

Factors to be Kept in Mind During the Removal of Hides

- Hygienic, clean conditions will help to maintain the quality of the hides, skins and wool.
- Contact between the meat and the hide or skin must be prevented at all costs.
- Use a flaying knife, and handle it with care because hides and skins can be badly damaged by cuts and flaying marks, and this lowers their value.
- The hide or skin must be removed from the carcass immediately after slaughter while it is still warm, as this makes its removal easier.

- As little blood as possible should meet the hide or skin.
- Do not sacrifice the value of the hide or skin for the sake of the carcass. If correct flaying methods are used, neither needs to be damaged.
- Do not use a flaying knife if it is possible to pull the hide or skin off the carcass, especially in the case of sheep where the skin can be eased off by hand.
- All cuts to the hide or skin must be made from the inside to the outside to prevent contamination.
- Contamination of the carcass because of dirty hands, hooks, rollers and protective clothing must be prevented.
- To prevent contamination, lactating udders must be cut off as soon as possible and placed in a container.



Individual Activity 9A:

Quality in existing implemented animal harvesting systems are maintained

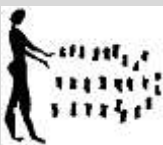


Individual Activity 9B

Animal harvesting and processing systems, ensuring animal product quality and integrity are maintained



Individual Activity 9C



Summative I

Learning Unit 2

Food Safety and Quality

Unit Standard		
116278	Implement a food safety and quality management system in the agricultural supply chain	
Specific Outcomes		
<p>SO 1: Manage a traceability system demonstrating operational efficiency in the agricultural supply chain.</p> <p>SO 2: Implement a record system on the farm.</p> <p>SO 3: Manage and maintain good agricultural practices (GAP) associated with good manufacturing practices (GMP), good health practices (GHP), good social practices (GSP) and good environmental practices (GEP).</p> <p>SO 4: Take decisions on reported non-conformances in respect of food safety, production, environmental, and social practices and implement corrective action in the agricultural environment.</p> <p>SO 5: Conduct internal audits according to the specifications of the trade/market in the agricultural environment.</p> <p>SO 6: Maintain standard operational procedures with regard to agro-chemicals, food safety, quality, and production practices, as well as environmental and social awareness within the agricultural supply chain.</p>		
Learning Outcomes		
Identifying	Communicating	Contributing
Working	Demonstrating	Science
Organise	Collecting	

Manage a Traceability System

Traceability is the ability to trace and follow a food product or any substance intended to be, or expected to be incorporated into, a food product through all stages of production, packing, processing, handling and distribution. Traceability refers to the completeness of the information about every step in a process chain. Traceability is one of the most important corner stones of food safety implementation. In this chapter, we will briefly revise certain concepts and checklists that were discussed in detail at previous levels, before looking at how traceability is implemented in the pre-harvest production environment along with the recordkeeping systems that are essential for traceability.

The Purpose of Traceability

Consumer protection is an essential aspect in the agricultural production environment. Traceability allows the grower to provide proof of the origin of all fresh produce, and therefore presents a measure of protection for the grower and the consumer. For grain production, traceability is problematic because it gets mixed but less critical because it is normally cooked and not consumed in a fresh form like fruit. It is critical that all employees in the supply chain understand the importance of food safety and the related traceability of it. Traceability serves the following purposes:

- **Security** – It is a legal requirement that any defective product that presents a risk to the consumer must be able to be recalled immediately. Traceability allows this by ensuring that the origins of the product can be determined.
- **Investigation** – If a product is found to be defective, at least two things have gone wrong. Firstly, the product itself was not produced, handled or packed in the prescribed manner, and secondly, the product may already have passed through quality control points where the defect should have been detected. Traceability allows for the necessary investigation to determine where these deviations occurred.
- **Production Management** – Traceability can lead to a greater understanding of the company's capabilities, making it possible to meet production targets in a shorter time and at a lower cost. Traceability can also be a starting point for the statistical methods of process control (SPC).
- **Stimulus for Technical Progress** – There is always a risk that a production unit that is profitable and that is meeting its objectives may become complacent. Implementing traceability systems forces management to assess the use of technology within the organisation and the skills levels of the employees.

- **Consumer Information** – Traceability allows the producer to collect information about consumers and their spending habits, which allows him to better define and understand his target market.

Traceability in the Supply Chain

Supply chains exist in production, manufacturing and service organisations, and they are principally concerned with the flow of products and information between supply chain member organisations. Supply chains are concerned with processes such as the procurement of products (sourcing), their transformation into finished product (production and packing), and distribution of that product to consumers. An agricultural supply chain is a series of distinct activities that take place in order to take the product from field or orchard to market. The demand chain is the supply chain in reverse, seen from the consumer’s point of view. The following diagram show a supply chain where exporting is part of it:

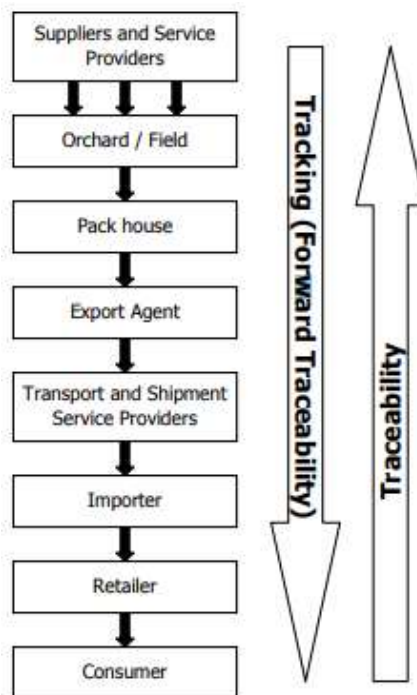


Figure 1.1: Fresh Produce Supply Chain

Tracking: Tracking is the ability to follow a path of a specified unit and / or batch of product through the supply chain as it moves between organisations towards the final point-of-process, point-of-sale or point-of-service. Tracking is also referred to as forward traceability.

Tracing: Tracing is the ability to identify the origin, movements and relevant associated information of a particular unit and / or batch of product located within the supply chain by reference to records held upstream. Tracking is also referred to as backward traceability.

In order to meet consumer demands for consistent supply of top quality, safe and nutritious foods, the design and implementation of full backward and forward traceable supply chains from farm to end-user has become an important part of the overall food quality assurance system. Farmers, post-harvest handling operators, marketers, researchers and policy makers need a sound understanding of the concepts and implications of supply chain traceability to assist in developing and implementing appropriate

Elements of Traceability

Traceability adds value to the overall quality management system by providing the communication linkage for identifying, verifying and isolating sources of noncompliance to agreed standards and customer expectations. On previous levels we examined traceability in its obvious and simplistic form, but it is important to remember that traceability have many different elements. Some of these elements are directly related to the Good Agricultural Practices (GAP).

There are six important elements of traceability, which in combination constitute an integrated agricultural and food supply chain traceability system. They are:

Product Traceability	Process traceability	Genetic Traceability	Input Traceability	Disease and pest Traceability	Measurement Traceability
<ul style="list-style-type: none"> Product traceability determines the physical location of a product at any stage in the supply chain to facilitate logistics and inventory management, product recall and dissemination of information to consumers and other stakeholders. 	<ul style="list-style-type: none"> Process traceability ascertains the type and sequence of activities that affect the product during the growing and post-harvest operations, meaning what happened to it, where and when. These include interactions between the product and physical, mechanical, chemical, environmental and atmospheric factors and the absence or presence of contaminants. 	<ul style="list-style-type: none"> Genetic traceability determines the genetic constitution of the product, which relates in terms of food production to the plant material that was used in the orchard. 	<ul style="list-style-type: none"> Input traceability determines the type and supplier of inputs such as fertiliser, chemical sprays, irrigation water, and the presence of additives and chemicals used for the preservation of the product. 	<ul style="list-style-type: none"> Disease and pest traceability traces the epidemiology of pests and biotic hazards such as bacteria, viruses and other pathogens that may contaminate food. 	<ul style="list-style-type: none"> Measurement traceability relates individual measurement results through an unbroken chain of calibrations to accepted reference standards. To achieve this, measuring and test equipment and measurement standards are calibrated utilising a reference standard whose calibration is certified as being traceable to a national or international standard.

The other aspect of measurement traceability relates to the property of the measurements, including data and calculations, generated throughout the supply chain and their relationship to

the requirements for quality. By focusing on the quality of measurements, rather than on a property of an instrument, it is possible to assure that the measurements are indeed adequate for the intended use. To achieve this, each measured data must specify the environmental, operator, and geospatial and temporal factors, which are not related to the instrument but impact on the quality of the data.

Recordkeeping for Traceability

As we have already seen, traceability is the ability to trace and follow a food product from the orchard to the basket, or back from the basket to the field or orchard. It is logical that effective recordkeeping is the cornerstone of traceability and the implementation of a traceability system. We also already know that traceability and supporting records for fresh produce are essential components of all quality management systems (QMS).

Checklists and compliance criteria have been developed to be used as an aid and self-assessment tool for food business operators (FBO's) in implementing the food safety system. The same checklists are used by PPECB auditors to verify that the system is in place. In the table below, the checklists and compliance criteria that have to be completed by law in order to ensure effective traceability are set out. Note that checklist and compliance criteria for SA GAP and on-farm pack houses have now been consolidated, therefore making it equally applicable to primary growers and secondary processors and packaging establishments.

Operation	Checklists and Compliance Criteria
On-Farm Pack houses	<ul style="list-style-type: none"> • SAGAP – On-Farm Pack house – Checklist – October 2006 • SAGAP – On-Farm Pack house – Compliance criteria - October 2006
Off-Farm Pack houses	<ul style="list-style-type: none"> • Off-Farm Pack houses – Checklist – September 2006 • Off-farm Pack houses – Compliance Criteria – September 2006
Processing Plants	<ul style="list-style-type: none"> • Processing Plants – Checklist – January 2006 • Processing Plants – Compliance Criteria – October 2005
SA GAP	<ul style="list-style-type: none"> • GAP – Compliance Criteria – June 2006
Cold Stores	<ul style="list-style-type: none"> • Cold Storage – Checklist – September 2006 • Cold Storage – Compliance Criteria – September 2006
Container Depots	<ul style="list-style-type: none"> • Container Depots – Checklist – September 2006 • Container Depots – Compliance Criteria – September 2006
Transporters	<ul style="list-style-type: none"> • Road Transporters – Checklist – September 2006 • Road Transporters – Compliance Criteria – September 2006

Table I.1: Traceability Checklists and Compliance Criteria



Individual Activity 10

Records can be kept manually, by filling the check lists and forms in by hand, or electronically, by recording the information on a computer. Electronic systems have the benefit of also processing the data and additional information can as a result be extracted from these programs.

Computer programs can, for example, deliver graphs and comparisons about the progress of the producer in terms of the quality of his produce. Electronic data can often be used when comparisons are drawn over a period of time. Although manual data can supply the same information, it is a lot more complicated to extract the required information without the assistance of electronic equipment and software.

The records that must be kept in accordance with the requirements of legislations and various food safety accreditation systems serve as evidence of compliance with traceability recommendations because specific information with dates and signatures of responsible parties are found on these documents if they have been filled in correctly.

All workers that are responsible for traceability records must therefore be trained in:

- How to complete the forms and checklists correctly.
- How, where, when and for how long, to report on and file forms and checklists.
- The accountability and responsibility in terms of traceability and the law related to the completion of (or failure to complete) these forms and checklists.

Records must be kept for a specified period in a central, accessible place, under the care of a person appointed for this task. The records must meet standard criteria of tracking and tracing, in other words it should be kept in a systematic and chronological way, by date, batch number, geographical reference point, and delivery or dispatch reference.

Implementing a Recordkeeping Traceability System

Traceability systems are implemented in most cases as part of the food safety and quality management system. Traceability is in fact a major requirement for such a system. HACCP (Hazard Analysis Critical Control Point system) principles are often used as the basis for designing and implementing a quality management system. Even is the HACCP system itself is

not used as such, the same basic principles should be applied. At previous levels we discussed the principles of HACCP in detail. As a reminder, they are:

- Hazard analysis
- Identification of critical control points
- Establishing critical limits
- Monitoring critical control points
- Establishing procedures for corrective action
- Recordkeeping
- Verification

HACCP provides for the risk, or hazard, assessment that has to be done prior to implementation of a quality control system, and for the ongoing management of identified risks.

ISO 22000 is a commercial food safety management standard that makes use of the HACCP principles and methodology to develop a HACCP plan. A HACCP plan is a document that describes how an organisation plans to manage and control its food safety hazards, and contains at least the following information:

- Identified critical control points (CCP's)
- Hazards that must be controlled at each CCP
- Control measures for each CCP
- Critical limits to be applied at each CCP
- Procedures for monitoring CCP's
- Procedures for remedial action when limits are exceeded

ISO 22000 provides for combining the HACCP plan with prerequisite programs (PRP's) and operational prerequisite programs (OPRP's) into a single integrated food safety management strategy.

Prerequisite programs (PRPs) are the conditions that must be established throughout the food chain and the activities and practices required to establish and maintain a hygienic environment. PRPs must be suitable and capable of providing food that is safe for human consumption. PRPs are also referred to as good hygienic practices, good agricultural practices, good production practices, good manufacturing practices, good distribution practices, and good trading practices.

Operational prerequisite programs (OPRPs) are prerequisite programs (PRPs) that are essential. They are essential because a hazard analysis has shown that they are necessary in order to control specific food safety hazards. OPRPs are used to reduce the likelihood that products will

be exposed to hazards, that they will be contaminated, and that hazards will proliferate. OPRPs are also used to reduce the likelihood that the processing environment will be exposed to hazards.



Group Activity 11



Individual Activity 12

Good Practices in the Agricultural Supply Chain

In agriculture, good practice guidelines have been developed for the entire supply chain, and they include:



Good practice guidelines are interactive and integrated, meaning that the requirements of good social practices, good health practices and good environmental practices are included and integrated with good agricultural practices and good manufacturing practices. In crop production and processing, GAP and GMP principles are therefore generally applied, as this provides for other good practices as well.

Good Agricultural Practices (GAP)

Good agricultural practices are a collection of principles and basic environmental and operational conditions that are necessary for the production of safe, wholesome fruit and vegetables. The term includes practices used in growing, harvesting, sorting, packing and storage operations. GAP principles also aim to ensure the sustainability of agricultural production.

Good Manufacturing Practices (GMP)

Good manufacturing practices are guidelines that manufacturers use to ensure the quality, consistency and safety of products and processes. GMP is often used simultaneously with GAP and includes practices used in sorting, packing, storage and transportation operations.

Good Health Practices (GHP)

Good health practices are guidelines that help reduce the risk of being implicated in the spread of food-borne illnesses through poor personnel hygiene. The scope of these practices is relevant to staff and worker health and hygiene.

Good Social Practices (GSP)

Good social practices address a wide range of environmental issues and are not only applicable to agriculture. These issues include:

- **Economically Disadvantaged Producers** – Good social practices prescribe a strategy for poverty alleviation and sustainable development. Its purpose is to create opportunities for producers who have been economically disadvantaged or marginalised by the conventional trading system.
- **Transparency and Accountability** – Good social practices encourage transparent management and commercial relations to deal fairly and respectfully with trading partners.
- **Capacity Building** – Good social practices is a means to develop producers' independence. Fair trade relationships provide continuity, during which producers and their marketing organisations can improve their management skills and their access to new markets.
- **Payment of a Fair Price** – A fair price in the regional or local context is one that has been agreed through dialogue and participation. It covers not only the costs of production but enables production which is socially just and environmentally sound. It provides fair pay to the producers and considers the principle of equal pay for equal work by women and men.
- **Gender Equity** – Good social practices mean that women's work is properly valued and rewarded. Women are paid for their contribution to the production process and are empowered in their organisations.
- **Working Conditions** – Good social practices mean a safe and healthy working environment for producers and workers. The participation of children, if any, does not

adversely affect their well-being, security, educational requirements and need for play, and conforms to the UN Convention on the Rights of the Child as well as the laws and norms in the local context.

- **Environment** – Good social practices actively encourages better environmental practices and the application of responsible methods of production.

Good Environmental Practices (GEP)

Good environmental practices address the following aspects:

- The environmental hazard posed by the product, its production, its use and ultimate disposal
- Substitution by less polluting activities or substances
- The scale of use
- The potential environmental benefit or penalty of substitute materials or activities
- Advances and changes in scientific knowledge and understanding
- Time limits for implementation
- Social and economic implications
- The precautionary principle, i.e. taking preventive measures when there is reason to assume that substances or energy introduced, directly or indirectly, into the natural environment may create hazards to human health, harm living resources and ecosystems, damage amenities or interfere with other legitimate uses of nature even when there is no conclusive evidence of a causal relationship between inputs and their effects



Individual Activity 13

The Principles of Good Agricultural Practices

GAPs may be applied to a wide range of farming systems and at different scales. They are applied through sustainable agricultural methods, such as integrated pest management, integrated fertilisation management and conservation. They rely on four principles:

- Economically and efficiently produce sufficient, safe and nutritious food
- Sustain and enhance natural resources
- Maintain viable farming enterprises and contribute to sustainable livelihoods

- Meet cultural and social demands of society

The key areas of concern when implementing a GAP program are:



Individual Activity 14

Refer to Annexure I: Guidelines for Good Agricultural Practices



Land use and Soil

Agricultural land and land that has been used for activities other than agriculture can be contaminated with pathogenic organisms or toxic chemical substances. Obtaining a history of the prior use of the land is important because it helps identify these potential hazards. In addition, the failure of prior users to follow Good Agricultural Practices can offer risks of contamination to produce grown on the soil.

It is important to obtain information about the previous use of the land where agricultural production is taking place. This can be done through interviews with prior owners, a review of municipal permits, or from other sources. This background information can help in the identification of situations that can increase the risk for fresh produce contamination.

Cultivated Land Information

Information that should be obtained about the history of the land includes if the land is being used or has been used for:

- Animal feeding or domestic animal production
- Barns or other housing of farm animals
- Garbage or toxic waste disposal, sanitary waste management
- Mining activities, or oil or gas extraction

Other information that should be obtained includes:

- If the land has experienced any serious flooding
- If the land has been treated in an uncontrolled manner with organic or inorganic fertilisers and / or pesticides.

Prior use of the land for animal feeding or domestic animal production can greatly increase the risk of contamination of fruit and vegetables with pathogens commonly found in the intestinal tract of animals. The potential for contamination from this source is related to the time that has passed since the land was used for animal feeding or production. The risk of contamination will also be influenced by conditions such as atmospheric temperature, sunlight and relative humidity.

The presence of barns or farm animals a short distance from the cultivation site increases the risk of product contamination. An assessment of the location of the animals and their facilities and an evaluation of drainage systems and water currents flowing near these areas will help determine the potential for contamination. In some instances, it may be necessary to create physical barriers or channels to divert water which may carry contaminants from the animals.

When the land has been used for garbage disposal or as a waste management site, it may contain decomposing organic matter and faecal material. Depending on the garbage contents, soil microbial loads can be extremely high, and the soil may also contain harmful chemicals or toxic contaminants.

Land that has been used for mining or petroleum extractions can be contaminated with heavy metals or hydrocarbons. Even if the contamination is located on a small portion of the land, factors such as rainfall and subterranean water flow should be evaluated. Analysis of toxic substances in the soil and a review of the environmental compliance of the extraction operation are recommended when the ground history indicates a high risk for chemical hazards. Heavy flooding can increase the sources of contamination. Water runoff can introduce pathogens and chemical contaminants from remote areas. Dead animals and standing water that remains after the floodwater have receded can lead to significant bacterial hazards. Individual assessment of each flooding situation is necessary, along with a review of the time that has passed since the flood and other conditions that can mitigate or reduce the risks. When there is concern about the safety of the site, microbiological analyses after the flooding has occurred may assist in identifying contamination.

Even if the investigation of the prior use of the land indicates that it has been used solely for agricultural production, prior production practices should be reviewed. Improper use of organic fertilisers may result in microbiological contamination of the soil, while inorganic fertiliser and / or pesticides used improperly can cause serious chemical hazards. Chemical compounds should have been used according to label recommendations and the products should be registered for use on the specific crop.

Current or Prior Use of Adjacent Land

The landowner or operator should research both the present and prior use of adjacent lands to identify potential sources of contamination and precautions that need to be taken to prevent contamination of fresh produce in the orchards.

Contamination from areas away from the actual growing area can reach produce through a variety of means including water, wind, workers, vehicles, or equipment moving from one area to another.



Water Sources and Irrigation Practices

During agricultural production of fruits and vegetables, water is used for numerous activities in the field, including pesticide and fertiliser applications and irrigation. Other water uses during produce handling include cooling, washing, waxing and the movement of fruit. In addition to activities where water comes in direct contact with produce, field and pack house workers use water for drinking and hand washing.

Water used in agricultural activities can be contaminated with pathogenic bacteria that may cause severe health problems to consumers. It can be a source of and vehicle for many biological hazards. Such micro-organisms are associated with gastrointestinal diseases that, in severe cases, can cause death. Poor quality water may be a direct source of contamination and also an important vehicle for spreading micro-organisms in the production field. The severity of the hazard resulting from poor quality water will depend on the type and number of micro-organisms in the water and their capacity to survive on the produce.

In addition to the quality of the water, other factors that can increase the risk of contamination of produce by water include the stage of development and type of crop, the time between the contact of the produce with the water and harvest, and other water and produce handling

practices. Fruits and vegetables with large surface areas, such as leafy vegetables, or those where the surface structure allows pathogens to adhere easily, are at a greater risk of contamination from water. This risk can be further increased when the contact with contaminated water takes place near harvest time or during post-harvest handling.

Potential Contamination Associated with Water Sources

Among the most common sources of agricultural water are surface rivers, streams, and open canals. Other sources include reservoirs such as swamps, lakes, tanks, ground water from boreholes and, occasionally, public water systems. Surface and reservoir sources vary considerably in their microbial content.

Microbial loads of surface water range from several thousand organisms per millilitre after a rainfall to a relatively low number after auto-purification, a normally occurring process in smooth waters. Surface waters can be exposed to temporary or intermittent contamination. This contamination can come from raw human and animal wastes, sewage water discharges, and water coming from adjacent areas dedicated to animal production or other contamination. Surface water generally flows some distances before it reaches the crop.

It is important to identify upstream sources of contamination to this flow. Elimination of this contamination may involve modification of the water's route or the introduction of intervention methods, such as filters. Water destined for agricultural production can easily become contaminated with human and / or animal faeces. It is important to keep animals and children out of the orchards and to provide field workers with properly constructed and maintained restrooms or mobile sanitary units.

Water contamination with human faecal material also can occur if wells and water systems are not properly developed, if septic systems fail or have deficiencies in their design, and from discharges that come from sewage treatment plants. Wildlife, including insects, rodents, reptiles, and birds, can carry diseases. Since these are found even in the most pristine environments, absolute protection of water is difficult and minimisation of potential contamination by wildlife should be the goal. It is generally believed that ground water is less likely than surface water to be contaminated with pathogens since ground water generally loses much of its bacterial and organic content after filtration through rock and clay layers. The bacterial content of ground water may vary from a few to a few hundred organisms per millilitre. However, under certain conditions, such as with shallow, old, or improperly constructed wells, the potential for contamination of ground water by surface water is a great risk.

Hazards Introduced by Irrigation Practices

Irrigation is the controlled application of water to the land or field with the purpose of providing the moisture levels required for the appropriate development of the plant. Irrigation plays a major role in achieving cultivable lands, especially in arid and semi-arid regions.

The hazards associated with irrigation practices are influenced by:

- Water source and quality
- Amount of water applied
- Irrigation program
- Irrigation method
- Soil drainage properties
- Pre-harvest interval

The closer to harvest irrigation occurs, the greater the chance for survival of pathogens and for the presence of residual chemicals on the produce. Irrigation methods, such as drip irrigation, where the contact between water and plant is minimised, are generally less likely to cause fresh produce contamination, however, the use of good quality water is still important.

Chemigation

Chemigation refers to the application of chemicals, such as fertilisers or pesticides, through the irrigation system. In crop production, fertilisers are often applied in this way, and this is referred to as fertigation.

When chemigation systems are not properly designed, they can result in serious ground water contamination, increasing the risk of chemical contamination of fresh produce. Safety equipment is available that can prevent back-flow and subsequent groundwater contamination. This equipment is relatively inexpensive and can prevent serious hazards.

In the case of fertilisers, it is important to know the plant toxicity of the specific fertiliser and to pay close attention to calculated and recommended dosage rates and schedules of application.

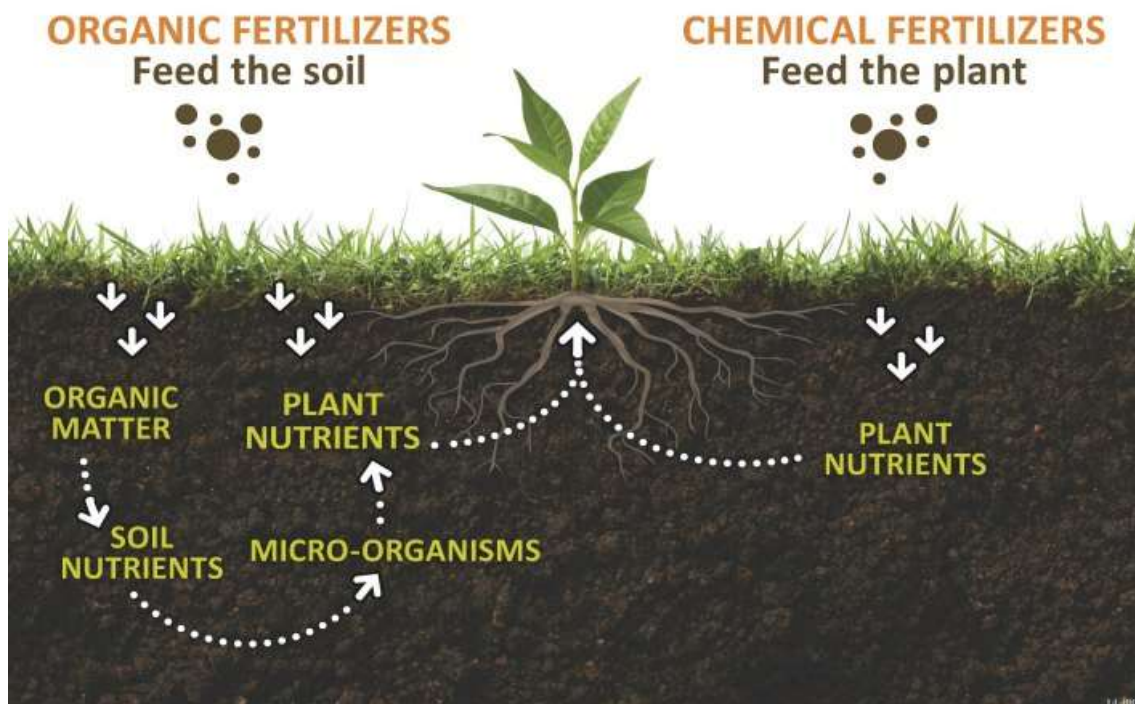
Additional safeguards against contamination during chemigation include training and certification of applicators and water analysis at the source and at locations near the water source. In addition, it is important to identify the runoff direction if runoff takes place. In the case of fertilisers, it is important to know the plant toxicity of the specific fertiliser and to pay close attention to calculated and recommended dosage rates and schedules of application.

Agricultural Water Microbiological Testing Procedures

Microbiological analyses are generally performed as indicators of contamination, especially for the verification of cleaning programs for tanks, wells, or when contamination from a specific source or event is suspected. They are time-consuming and are used to track safety trends, not for daily monitoring activities, and are generally used to verify that the appropriate preventive measures are in place.

Proper records of water microbiological quality are an important good agricultural practice. It is important to document the frequency and results of each water test since changes in results may identify problems.

Testing for specific pathogenic bacteria in water may be inappropriate. They could be present in very small amounts and thus not detected. Furthermore, microbiological characteristics of water can vary considerably depending on such factors as the water source, season, and sampling time. Since waterborne disease is usually the result of faecal contamination of water supplies, it is more efficient to determine if faecal contamination is present than to actually look for the presence of pathogens.



Fertilisers

Good agricultural practices prescribe the use of soil and water conservation practices, such as channel construction, drain control structures, diversion tanks and vegetative barriers and so

on, which act as physical barriers in the event of a contaminated water runoff. A very important aspect of soil and water conservation is the management of fertilisers that are applied to the soil. Animal manure and solid biological waste may provide safe, effective fertiliser when properly treated. If the treatment is inadequate, or if no treatment is used, the risk of contamination of fruit and vegetables with pathogenic micro-organisms is extremely high.

The rate of survival of contaminants in manure and their transfer to crops depends on a number of factors. These include soil type, manure application rate, soil pH, composting method, and time of application. Raw materials commonly used to produce organic fertilisers include:

- Animal manure
- Post-harvest material
- Organic waste
- Bio-solids / sludge (human waste)

Inorganic fertilisers are produced through commercial chemical processes. Although the products themselves are generally not a source of microbial contamination, care should be taken to assure that contamination is not introduced using contaminated water to mix the products or unclean equipment used in their application.

Many inorganic fertilisers may cause residues which are unacceptable for export requirements of certain markets. It is therefore very important to keep accurate fertilisation records in order to complete the cycle of traceability as well as to implement the relevant good agricultural practices.



Wildlife, Pest and Vermin Control

Animal Exclusion from Production Areas

All animals including mammals, birds, reptiles and insects are considered vehicles for contamination with pathogenic organisms. Many micro-organisms can be found on the surface of animals' hair, feathers, hide, and skins, and in their respiratory and gastrointestinal systems. In addition to food-borne pathogens, animals can carry many spoilage microorganisms, which can greatly reduce the quality and shelf-life of fresh produce. Quality deterioration also can be accelerated by physical damage to the surface of the fruit caused by animals, birds and insects.

In addition to lowering quality, the wounded surfaces become an open door to pathogenic and spoilage organisms, greatly increasing the risk of contamination of the internal parts of the produce.

Maintain domestic and farm animals away from the fruit orchards and establish physical barriers or vegetation to prevent entry of wild animals. These precautions are especially important near harvest time. Field workers should not be allowed to bring dogs, cats or other domestic animals into the field, packaging areas or storage facilities. Dead or trapped animals such as birds, insects, and rats, should be disposed of promptly to avoid attracting other animals. Proper disposal procedures are to bury or incinerate the animal.

It is important to keep areas around the orchards clean and neat to further protect the plants and fruit. The following general guidelines should be adhered to:

- Keep the grass short to avoid the presence of rats, reptiles and other pests.
- Keep all areas free of garbage.
- Remove all unnecessary equipment. Old and broken equipment provide protection for rats and insects.
- Remove nests from fields and buildings

Since animals are attracted by water, the presence of water in the orchards and in the fruit packing or storage area should be limited to what is needed for specific uses. In the pack house, surfaces and floors should be kept clean and as dry as possible to avoid water that may promote bacterial and pest growth. Water tanks and storage containers should be capped to prevent access to water sources.

Pest Control in Fresh Produce Operations

In fresh produce operations, the term pest applies to all organisms that can damage or contaminate fruit and vegetables during field production, packaging, storage and distribution. Insects, micro-organisms, wild animals and weeds, which can also harbour insects, vermin, etc., should all be considered in a pest control program. This program should also extend to the pack house, storage facilities and vehicles used for transport.

Common Pest Control Procedures


Pests can be controlled through a variety of methods. Table 2.1 describes the various pest control methods that are commonly used. When selecting a pest control method, choose one that is approved for local, regional, and national level use and apply it appropriately.

Method	Description
Biological Control	<p>Biological control uses living organisms for pest control. Biological pesticides fall into three major classes, which is:</p> <ul style="list-style-type: none"> • Microbial pesticides that contain micro-organisms, such as bacteria, fungi, or viruses, that attacks a specific pest • Plant pesticides that are substances that plants produce from genetic material that has been added to the plant • Biochemical pesticides that are naturally occurring substances that control pests by non-toxic mechanisms, for example pheromones. <p>Some plant growth regulators are naturally occurring bio pesticides. Biological control also includes the release of parasitic and predaceous insects to control insect pests or weed species.</p>
Plant Resistance	<p>Crop plants are bred to produce varieties that resist insects and other pests. Crop plants are also genetically altered to allow them to withstand herbicides so that only weeds are killed when treated with chemical herbicides.</p>
Cultural Control	<p>Cultural methods include crop rotation, soil tillage, the use of trap crops, changing planting or harvesting time, intercropping with other crops or with varieties that repel pests</p>
Mechanical and Physical Control	<p>Mechanical and physical methods refer to techniques such as collecting pests with traps, suction devices or by hand, or such as using fire, heat, cold, sound, or physical barriers or screens.</p>
Chemical Control	<p>Chemical control methods make use of conventional pesticides, which are synthetic chemicals that are intended to prevent, destroy, repel or mitigate any pest.</p>

Integrated Pest Management (IPM)	IPM is a pest management approach that uses all available pest control methods, including the judicious use of pesticides, to optimise a crop's ability to resist the pest with the least hazard to humans and the environment. Integrated pest management supports the control of pests through methods that are less dependent on chemicals. In recent years, consumers of fresh produce are becoming more aware of the chemicals that are applied to fresh produce and the demand is therefore for a more integrated pest control strategy.
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Pest control programs should include a series of scheduled inspections to identify situations that can encourage the introduction of pests, identify the presence of pests, and quantify their number.

Refer to Annexure 2: Read more about Safe use of pesticides

	Individual Activity 15
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Worker Health and Safety

Assuring worker health both increases worker productivity and aids in preventing potential microbial contamination of crops. An infected employee, whether he / she is showing symptoms or not, can easily contaminate fresh produce if they do not practice good hygiene, such as washing their hands after sneezing, touching hair or other body parts, or using the restroom.

General symptoms that flag an employee with the potential for causing microbial contamination of produce include:

- Diarrhoea
- Vomiting
- Dizziness
- Abdominal cramps
- Exposed or open wounds
- Hepatitis or jaundice (yellow colour of the skin)

Employees with gastrointestinal distress or open wounds can contaminate fresh fruits and vegetables through handling. Persons that do not show any symptoms of disease can transmit microbial pathogens. Many micro-organisms can be guests in the human body without evidence of disease and can be spread to others by the human hosts. Workers should be trained to report any disease symptoms to supervisors.

Sick employees should not participate in activities that involve direct contact with the fresh produce or with packaging material until they have clearance from a licensed healthcare provider.

Health Programs

Ideally, agricultural workers should have access to a health care system that is accessible to them in their workplace. Workers have been shown to be more willing to report symptoms of illness or disease if they have access to healthcare professionals. Information on and contact details of medical service providers that should be contacted in case of emergency must be prominently displayed.

Any worker with exposed wounds that can directly contaminate fresh produce should have these wounds properly disinfected and covered before participating in production and handling activities. A first aid kit with supplies for treating worker injuries should be readily available at the worksite.

Worker Hygiene Training Program

It is also important for employers to provide fruit and vegetable handlers with a training program on good food handling and hygiene practices. The possibility of produce contamination is directly related to the quality of the worker training program.

Proper hygiene procedures should be established and included in hygiene and health training programs. All employees including supervisors, temporary personnel, part-time and full-time workers should participate in these activities. The level of knowledge required should be set according to the type of operation, responsibilities, and type of activities in which the employee participates.

Training should be reinforced constantly. Demonstrations of procedures are usually more effective than simple verbal instructions. Training should be in the language and dialect of the employees to ensure comprehension and trainers should consider cultural aversions and ingrained practices when planning training.

Drinking Water

Water for human consumption should be potable, which means that it should be free of micro-organisms and chemical substances that can jeopardise the health of the person consuming it. Ensuring the availability of potable drinking water for field workers can minimise the risk of them developing disease and consequently contaminating fresh produce.

Precautions that should be taken for the handling of drinking water in the fields and packing areas include:

- Water supply systems should be in good condition and operating properly
- Water should be stored in clean, sanitised containers and tanks
- Water containers should be washed and sanitised daily
- Water storage containers should be closed always
- Containers should be kept out of the sun and away from excessive heat
- Disposable cups should be provided, and each person should use a different cup

Frequent microbiological and physical evaluation should be performed on drinking water when the water is being stored or treated on site. Simple evaluations of the colour, odour and taste of water should be performed as part of the daily monitoring procedures. If any of the water quality tests indicate the quality is not adequate, the water should be replaced to reduce the chances of infection and the proper authorities should be notified of the problem.

Worker Hygiene Practices and Sanitation Facilities

The responsibility for reducing or avoiding contamination during primary production falls heavily on agricultural workers. Employers can provide training and other resources to educate workers, but the effectiveness of the program, in the end, relies on the worker's understanding and implementation of personal hygiene and safety practices.

Therefore, management should provide workers with information about acceptable hygiene practices, ensure it is understood, and send a clear signal to workers about the importance of these practices.

Hand washing is required:

- At the beginning of the workday
- After going to the restroom
- After smoking or eating
- After breaks
- After sneezing, coughing, or touching the nose
- After touching or scratching the skin or wounds
- After touching dirty equipment and utensils
- After touching trash on the floor or after handling waste material
- After touching or handling fertilisers, pesticides, chemicals, or cleaning materials

Sanitary Field Stations

The basic requirements for sanitary field stations are:

- Toilets should be connected to an evacuation or sewage system adequately constructed to avoid contamination of fields, water sources or product.
- Sanitary stations should be in good, clean, and sanitary, and should have adequate clean water, soap and paper towels.
- There should be an adequate number of toilets for the number of employees working. It is recommended that there be at least one toilet for every 20 persons of the same gender.
- Toilets should be accessible for the personnel, meaning close to their working area, at a maximum distance of 400 meters or a 5-minute walk.
- Toilet facilities should be separated by at least 400 meters from the water sources.
- Water stations with potable water for drinking should be in place during the harvest season.



Harvesting

Most fresh fruits and vegetables are extremely perishable. The safety and quality of the produce when it reaches the retail market is strongly influenced by the safety and quality of the produce at harvest. Additional factors that affect safety and quality of fresh produce at market include handling, storage temperature, transportation conditions, and the time period between harvest and consumption.

Maintaining safe, high-quality produce with an adequate shelf-life depends on both the pre-harvest factors discussed earlier and the control measures taken throughout the distribution chain. This chain begins with harvesting the produce. The choice of harvesting method depends on the produce characteristics. Mechanical harvesting is recommended for produce that can withstand physical handling.

For commodities destined for the fresh market, integrity and appearance are important, and manual harvesting is therefore widely used. Most fruit is almost exclusively harvested manually. With manual harvest, worker hygiene is especially important since there is a great deal of hand contact with the product that could lead to contamination. Proper sanitation of harvest tools is also critical to product safety.

Physical Damage

Physical damage caused during harvesting may lead to:

- Water loss
- Increased respiration rate
- Initiation of ethylene synthesis
- Fruit discolouration
- Penetration of micro-organisms

In-Field Packaging Operations

The following is recommended for products packed in the production field:

- All workers involved in field packing operations must follow good hygiene and sanitation practices.
- Avoid the direct contact of packages, containers, or products with the soil.
- All containers, baskets or empty boxes should be clean and free from visible signs of dirt, oil, grease and chemical contaminants.
- Packing containers should be stored in a clean dry place away from the field and should be transported and handled with the same sanitary considerations

Post-Harvest Water Quality

Water is a key to a number of post-harvest operations. It is used in dump tanks to reduce physical injury as bins or picking trailers are emptied onto a packing line. It may be used for rinsing at any point on a packing line. It is needed for mixing solutions of waxes and fungicides. Hot water treatment is also used as a quarantine measure for pest control.

Water quality is important in reducing contamination during post-harvest cooling, washing and sanitising operations. The water used for post-harvest operations should be potable and free of disease-causing organisms. Water taken and used directly from rivers or holding ponds should not be used for post-harvest washing or cooling.

Practices that are used to reduce the risk of contamination of produce by postharvest processing water are as follows:

- Perform periodic water sampling and microbial testing
- Follow appropriate guidelines for pack house water sanitation
- Change water as necessary to maintain sanitary conditions
- Clean and sanitise water contact surfaces, such as dump tanks and wash tanks
- Install backflow devices and legal air gaps to prevent contamination of clean water with potentially contaminated water

- Routinely inspect and maintain equipment designed to assist in maintaining water quality, such as chlorine injectors, filtration systems, and backflow devices

Cooling Considerations

Immediately after harvest the temperature of the fresh produce is high. To extend the shelf-life and quality of fresh fruits and vegetables, products are generally cooled within 24 hours after harvesting. Heat elimination is commonly applied to highly perishable commodities such as fruits. There are many different types of cooling systems available.

Methods that are commonly used to cool fresh produce include:

- Room cooling
- Forced air cooling
- Hydro-cooling
- Package icing
- Vacuum cooling

Of the commonly used commercial cooling methods, the ones using air and vacuum present the lowest risk for contamination. However, the air introduced in the cooling systems can represent a potential microbial hazard. Microorganisms found in dust and tiny water droplets can be introduced onto product using these cooling systems. Such micro-organisms can come from outside dust, soil, equipment, and waste products. These micro-organisms cannot develop in the air, but air can serve as the vehicle through which they can reach the product.

Cooling methods using water and ice as the cooling mediums have the greatest potential for contamination of fruits and vegetables. Water and ice used for cooling operations are potential contamination sources. Water used in hydrocooling systems and for ice making should be potable and ice should be made and held under sanitary conditions.



Group Activity 16

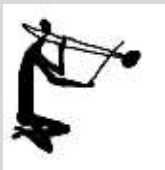
Non-Conformances and the Effect Thereof on Quality of the Product

Now that we have examined traceability through effective recordkeeping, and considerations regarding the management and maintenance of Good Agricultural Practices, it is important to examine the implications of non-conformance and explore possibilities for corrective actions. In the context of food safety management systems, the term “non-conformance” is used not only to describe products that are potentially unsafe because it deviates from set standards, but also to describe the processes and procedures that were deviated from in the first place and caused the deviation in the product.

A food safety management system is designed to consistently produce products that adhere to certain quality and safety standards. The system should be such that as long as all prescribed policies and procedures are adhered to the product is virtually guaranteed to be safe and of good quality.

Assuming that the food safety management system adheres to these requirements, it follows that only non-conformance or non-compliance to the prescribed policies and procedures can result in a product that does not conform to quality and safety standards, because it was produced or manufactured during a period when critical limits were violated or exceeded, or when an organisation has lost control of a prerequisite program (PRP) or an operational prerequisite program (OPRP).

Non-conformance to food safety procedures may compromise product quality by causing blemishing, contamination, accelerated decay, or exceeding of maximum residue levels, which would render it unsafe for human consumption or unsuitable for meeting specifications of export markets. Many exports or local contracts are based on the assurance provided by the implementation of and management according to a food safety management systems and adherence to Good Agricultural Practices. The buyer of fresh produce would not be satisfied with a product that does not conform to the standards and specifications. Additionally, it will raise concerns for the buyer if they find repeated instances of non-conformance to the plan. Regulations of importing countries allow for fruit that do not conform to quality and safety standards to be quarantined and such fruit cannot be sold in that market.



Individual Activity 17



The Role of Traceability and Recordkeeping in identifying Non-Conformance

The purpose of traceability and associated recordkeeping was discussed. As part of the food safety management system, data and records associated with traceability are analysed and interpreted in order to identify instances of non-conformance.

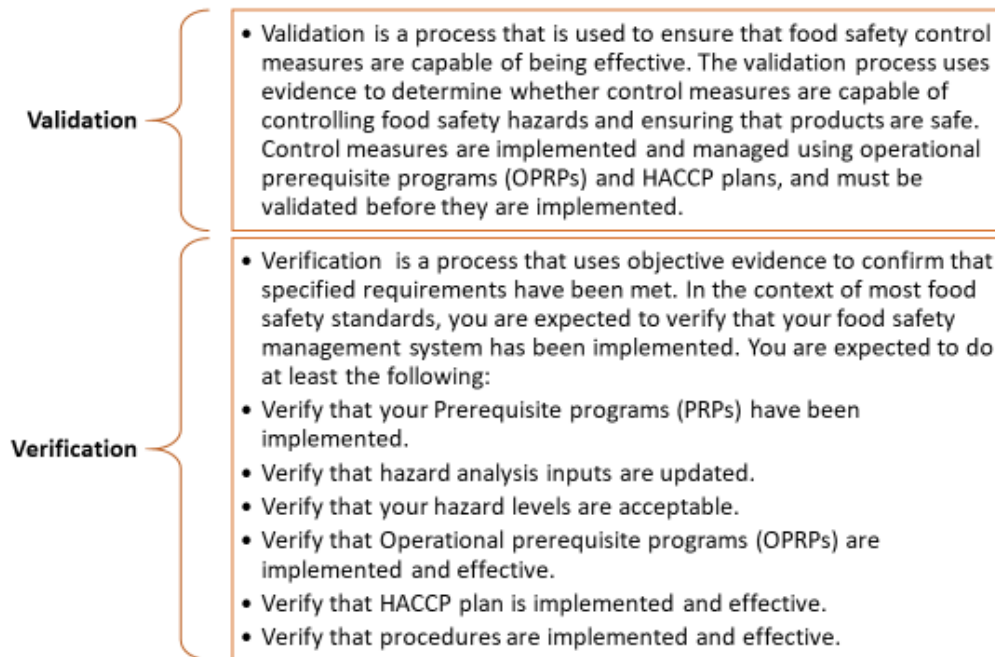
This is done both on an ongoing basis, where the records that relate specifically to identified risk areas, or critical control points, are monitored to ensure that critical limits are maintained. If critical limits are exceeded at any critical control point, the planned corrective action must be taken immediately to eliminate or control the non-conformance. Records related to traceability is also useful in determining the point at which non-conformance occurred if it is found that the end-product does not conform to safety and quality standards. Because traceability records are designed to provide a complete picture of the process to which the fruit was subject, the point at which the critical limits were exceeded can be identified if non-conforming fruit is found.

Example:

Non-Conformance and Recordkeeping In 2006, a consignment of fruit was found on arrival in Japan to exceed maximum residue levels. The consignment consisted of 4,000 pallets of fruit. The procedure in such a case prescribes that the entire consignment is rejected until it can be proven that not all the fruit was subjected to the same processes. Because the grower had sound traceability records, he could prove that most of the fruit were not subject to processes where

the critical limits were exceeded. The non-confirming fruit was accurately identified, and the remainder passed inspection.

Validation and Verification



Corrective Actions

Corrective actions are steps that are taken to eliminate the causes of an existing nonconformity. The corrective action process includes causal analysis and is designed to prevent recurrence.

It is difficult to quantify or prescribe corrective actions, as the options would be related directly to the food safety management system and identified deviation or non-conformance. The scope of the corrective actions is also directly related to the class and grade of fruit to be produced and the market for which it is destined. Planned corrective actions are described in the Quality Management Standard Operations Procedure Manual or in the Standard Operating Procedures manual for the food safety management system. The development of such prescribed corrective actions relates directly to HACCP step 5.

The following principles are applied in terms of taking corrective actions:

- Early identification of the problem through prescribed and regular analysis and interpretation reports.
- Open and honest channels of communication regarding the occurrence of non-conformance to avoid health risks to the consumer and limit liability to the grower and its agents.
- Rapid and coordinated response to the problem, for example quarantine any affected produce immediately or suspend procedures that caused the problem.
- Investigation and confirmation of non-conformance as measured against the critical control points identified in the food safety management system.
- Confirmation and identification of source(s) of the non-conformance or nonconforming product(s) by measuring against critical limits.
- Take decisive action to prevent future non-conformance instances or the production of similar non-conforming produce.



Conduct Internal Audits

The International Organisation for Standardisation (ISO) describes audits as follows: a systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives. The documented food safety management system on a farm

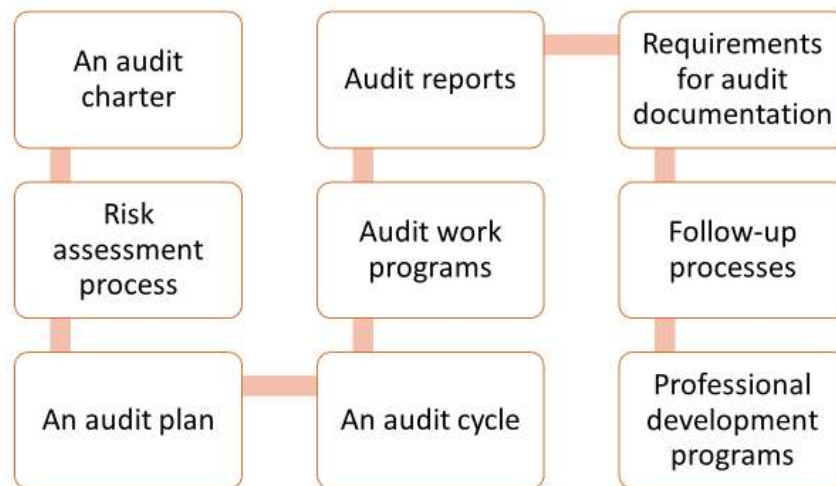
can be of the highest quality, but if it is not implemented correctly and consistently and if its prescriptions and procedures are not followed, it is of no real value at all. Internal audits are used to monitor and probe the integrity of the food safety management system continuously and to thereby ensure that it is implemented as prescribed.

The internal auditor conducts regulatory system audits to verify that an establishment's food safety management system, such as the HACCP system and its prerequisite programs, HACCP plans and reassessment procedures, is implemented as described and is continuously effective.

Elements of Internal Audit System

An organisation's approach to internal audits consists of the policies and procedures that govern its internal audit functions, including auditing schedules. There are no hard and fast rules that prescribe exactly how internal audit systems for food safety should be designed and executed and the approach to conducting an internal audit is often closely related to the quality management system.

There are certain common elements that occur in all internal audit systems, being:



Audit Charter

A mission statement or audit charter outlines the purpose, objectives, organisation, authorities, and responsibilities of the internal auditor, audit staff, audit management, and the audit committee.

Risk Assessment

Process A risk assessment process describes and analyses the risks inherent in a given line of business. The level of risk should be one of the most significant factors considered when

determining the frequency of audits. Auditors should update the risk assessment at least annually, or more frequently if necessary, to reflect changes to internal control or work processes, and to incorporate new lines of business.

Audit Cycle

An audit cycle identifies the frequency of audits. Auditors usually determine the frequency by performing a risk assessment, as noted above, of areas to be audited. While staff and time availability may influence the audit cycle, they should not be overriding factors in reducing the frequency of audits for high-risk areas.

Audit Plan

The audit plan details the internal audit budgeting and planning processes. The plan describes audit goals, schedules, staffing needs, and reporting. The audit plan should cover at least 12 months and should be developed by combining the results of the risk assessment and the resources required to result in the timing and frequency of the planned audit cycle.

The audit committee should formally approve the audit plan annually, or review it annually in the case of multi-year audit plans. The internal auditors should report the status of planned versus actual audits, and any changes to the annual audit plan, to the audit committee for its approval on a periodic basis.

Audit Work Programs

Audit work programs that set out for each audit area the required scope and resources, including the selection of audit procedures, the extent of testing, and the basis for conclusions. Well-planned, properly structured audit programs are essential to strong risk management and to the development of comprehensive internal control systems.

Audit Reports

Written audit reports inform the board and management of individual department or division compliance with policies and procedures. These reports should state whether operating processes and internal controls are effective, and describe deficiencies as well as suggested corrective actions. The audit manager should consider implementing an audit rating system approved by the audit committee. The rating system facilitates conveying to the board a consistent and concise assessment of the net risk posed by the area or function audited.

Requirements for Audit Documentation

The requirements for audit work paper documentation should be clearly described in the audit policies and procedures, including work paper retention policies. This ensures clear support for all audit findings and work performed.


Follow-Up Processes

Follow-up processes require internal auditors to determine the disposition of any agreed-upon actions to correct significant deficiencies.

Professional Development Programs

Professional development programs must be in place for the institution's audit staff to maintain the necessary technical expertise.

Refer to Annexure 3: Read more about Pre-harvest internal audits



Individual Activity 18



Maintain Standard Operational Procedures

Standard operating procedures (SOPs) are written documents that describe step-by-step in detail how a procedure should be done. SOPs describe both technical and administrative operational elements of an organisation. The standard operating procedure manual for food safety is to a large extent the documentation for a food safety management system. The SOPs contained in the manual is used during an internal audit to measure the actual procedures and processes that are employed.

The development and use of SOPs is an integral part of a successful quality management system. It provides individuals with the information to perform a job properly and facilitates consistency in the quality and integrity of a product through consistent implementation of a process or procedure within the organisation. SOPs can also be used as a part of personnel training programs, since they should provide detailed work instructions. When historical data are being evaluated for current use, SOPs can be valuable for reconstructing project activities.

In addition, SOPs are frequently used as checklists by inspectors when auditing procedures. Ultimately, the benefits of a valid SOP are reduced work effort, along with improved data comparability, credibility, and legal defensibility.

Drafting Standard Operating Procedures

Standard operating procedures are often compiled into a standard operating procedures manual. The different standard operating procedures in a manual are typically related to managing one specific outcome or objective and are normally related to each other. The SOP manual related

to food safety will for instance hold systematic and sequential procedures related to each of the steps that the organisation will follow in order to ensure food safety.

It is important that each producer examines every aspect of the GAP list and associated HAACP plan and draft specific operating procedures that will ensure food safety principles are adhered to in line with his food safety management system. A SOP manual should be organised to ensure ease and efficiency of use and to be specific to the organisation that develops it. There is no one correct format – internal formatting varies with each organisation and with the type of SOP being written. A SOP should be written with sufficient detail so that someone with a basic understanding of the field can successfully reproduce the activity or procedure when unsupervised.

SOPs should be written by individuals knowledgeable with the activity and the organisation's internal structure. These individuals are essentially subject-matter experts who actually perform the work or use the process. A team approach can also be followed, especially for multi-tasked processes where the experiences of a number of individuals are critical. The organisation should have a procedure in place for determining what procedures or processes need to be documented.

The first step in an SOP manual is to determine the policies of the organisation regarding:

- Food Safety
- Traceability
- Good Agricultural and Production Practices
- Quality and Quality Management
- Environmental awareness and conservation
- Social awareness

Validating Reviewing Standard Operating Procedures

SOPs should be reviewed and validated by one or more individuals with appropriate training and experience with the process. It is especially helpful if the draft SOPs are tested by an individual other than the original writer before the SOPs are finalised.

The finalised SOPs should be approved as described in the organisation's quality management plan. Generally, the immediate supervisor, such as a section or branch chief, and the organisation's quality assurance officer review and approve each SOP. Signature approval indicates that a SOP has been both reviewed and approved by management. SOPs need to remain

current. Therefore, whenever procedures are changed, SOPs should be updated and re-approved.

SOPs should be also systematically reviewed on a periodic basis to ensure that the policies and procedures remain current and appropriate, or to determine whether SOPs are even needed. The review date should be added to each SOP that has been reviewed. If a SOP describes a process that is no longer followed, it should be withdrawn from the current file and archived. The review process should not be overly cumbersome, or SOPs will never get reviewed. The frequency of review should be indicated by management in the organisation's quality management plan, which should also indicate the individual(s) responsible for ensuring that SOPs are current.

Checklists

Many activities use checklists to ensure that steps are followed in order. Checklists are also used to document completed actions. Any checklists or forms that is included as part of an activity should be referenced at the points in the procedure where they are to be used and then attached to the SOP.

Remember that the checklist is not the SOP, but a part of the SOP. In some cases, detailed checklists are prepared specifically for a given activity. In those cases, the SOP should describe, at least generally, how the checklist is to be prepared, or on what it is to be based. Copies of specific checklists should be kept in the file with the activity results or with the SOP.

Standard Operating Procedure Document Control and Tracking

Each organisation should develop a numbering system to systematically identify and label their SOPs, and the document control should be described in its quality management plan.

Generally, each page of a SOP should have control documentation notation. A short title and identification (ID) number can serve as a reference designation. The revision number and date are very useful in identifying the SOP in use when reviewing historical data and is critical when the need for evidentiary records is involved and when the activity is being reviewed. When the number of pages is indicated, the user can quickly check if the SOP is complete. Generally, this type of document control notation is located in the upper right-hand corner of each document page following the title page.

The organisation should maintain a master list of all SOPs, and this file should minimally include the date of the current version. This list may be used when audits are being considered or when questions are raised as to practices being followed within the organisation.



Individual Activity 19



Summative 2

Learning Unit 3

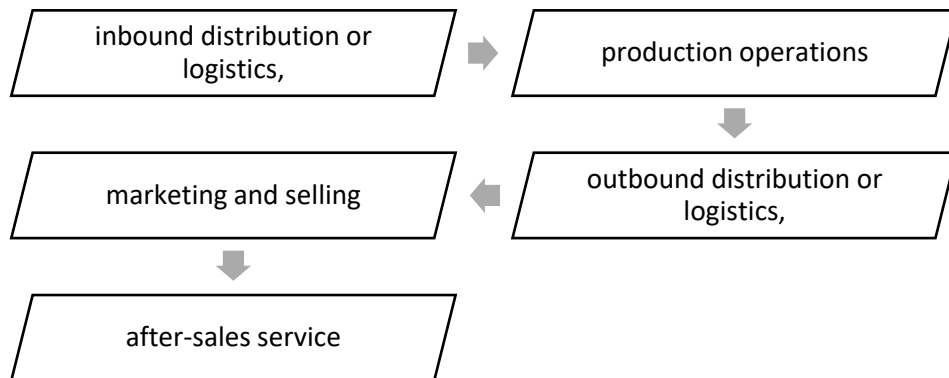
Agri-Marketing

Unit Standard	
116684	Participate in the development and management of an agricultural marketing plan
Specific Outcomes	
<p>SO 1: Structure a marketing plan using a systems approach.</p> <p>SO 2: Structure a rolling marketing plan for a specific agricultural commodity.</p> <p>SO 3: Structure a risk plan to accommodate variable and uncertainties in a marketing plan for a specific agricultural commodity.</p> <p>SO 4: Monitor the marketing plan and apply remedial actions.</p>	
Learning Outcomes	
<p>Identifying</p> <p>Working</p> <p>Organise</p>	

Understanding the Value Chain

A value chain is an interlinked value-adding activity that convert inputs into outputs which, in turn, add to the bottom line and help create competitive advantage. The chain of activities gives the products more added value than the sum of added values of all activities.

A value chain typically consists of:



These activities are supported by:

Purchasing or procurement: If the farmer takes calculated decisions on which seed to purchase, which chemicals to use, water and electricity usage and other inputs, he can maintain optimum production whilst farming becomes more sustainable.

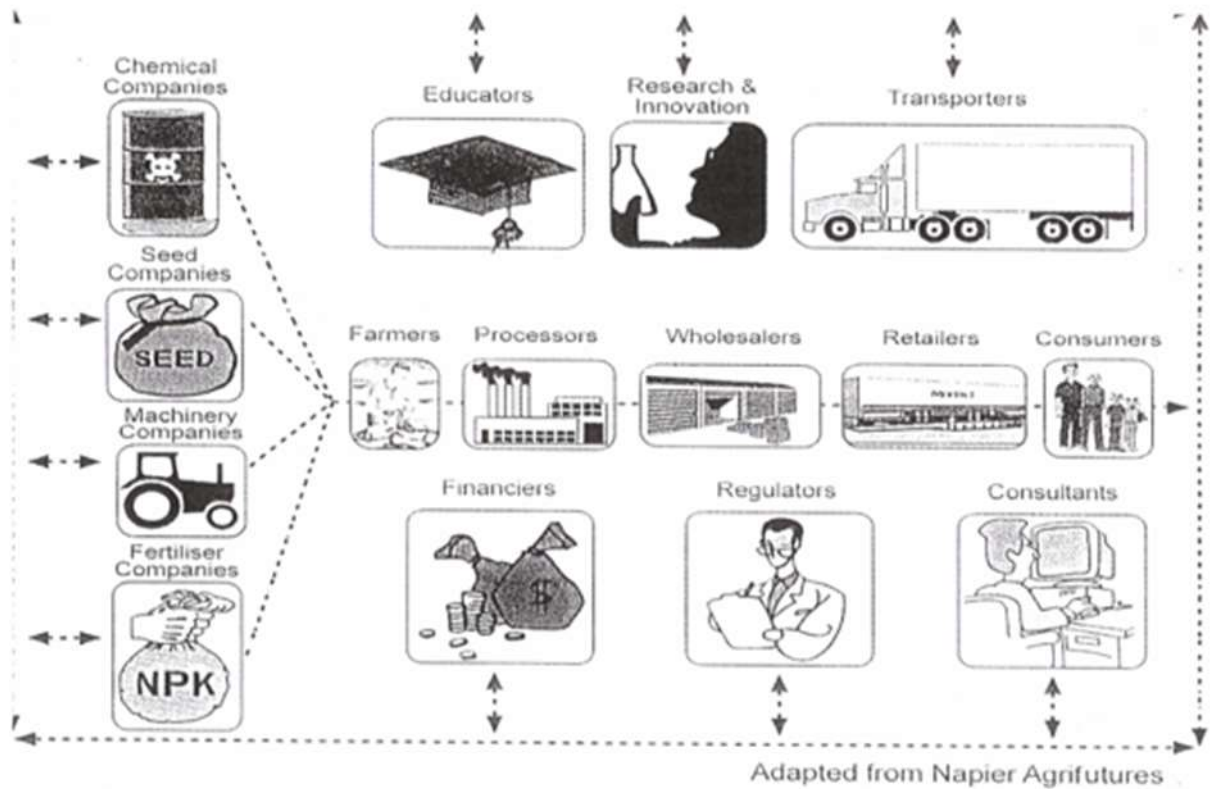
Research and development: Ongoing research ensures that agriculture remains to be a sustainable business. There are numerous sources for a farmer that he can stay updated on the latest research to remain competitive.

Human Resource development: The efficient utilisation of human resources within the boundaries of labour legislation remains a challenge to farmers.

Producers organisations: RPO is the main organisation assisting cattle farmers in all aspects, including supply chain information and research and development. More producer organisations exist for other producers.

The value chain concept provides a way of understanding relationships between businesses, methods for increasing efficiency, and ways to enable businesses to increase productivity and add value. Value-chain approaches in the agriculture sector are a vehicle for linking small businesses to markets, and are essential for improving South Africa's economy and reducing poverty.

To understand the comprehensive nature of the meat production supply chain, we need to take a systems-approach. The diagram below, explains the supply chain by putting each role player into perspective:



In “Strategic Approach to Farming Success”, Nell and Napier ask: “When you get up in the morning. Do you say, ‘I am a cattle farmer’ or do you say, ‘I am a food producer’. In which way do you talk to yourself? The really winning producers these days have redefined the way they view themselves. At the very least they say, ‘I am a food producer’. Now, when they say they are food producers, rather than cattle farmers, they immediately think “I need to build relationships throughout the supply chain, all the way to the consumers and I need to think about what the market dictates- seeing that I am producing food for the market.” An average farmer with a good holistic strategy is in a much better position than an outstanding farmer who is only production focused.

The new farm, the new farming business, the new agriculture tells us that the farm cannot be a fragment or an isolated part of the food production system, it has to be integrated, planned, constructed and farmed with a live awareness of what is happening in the value chain.

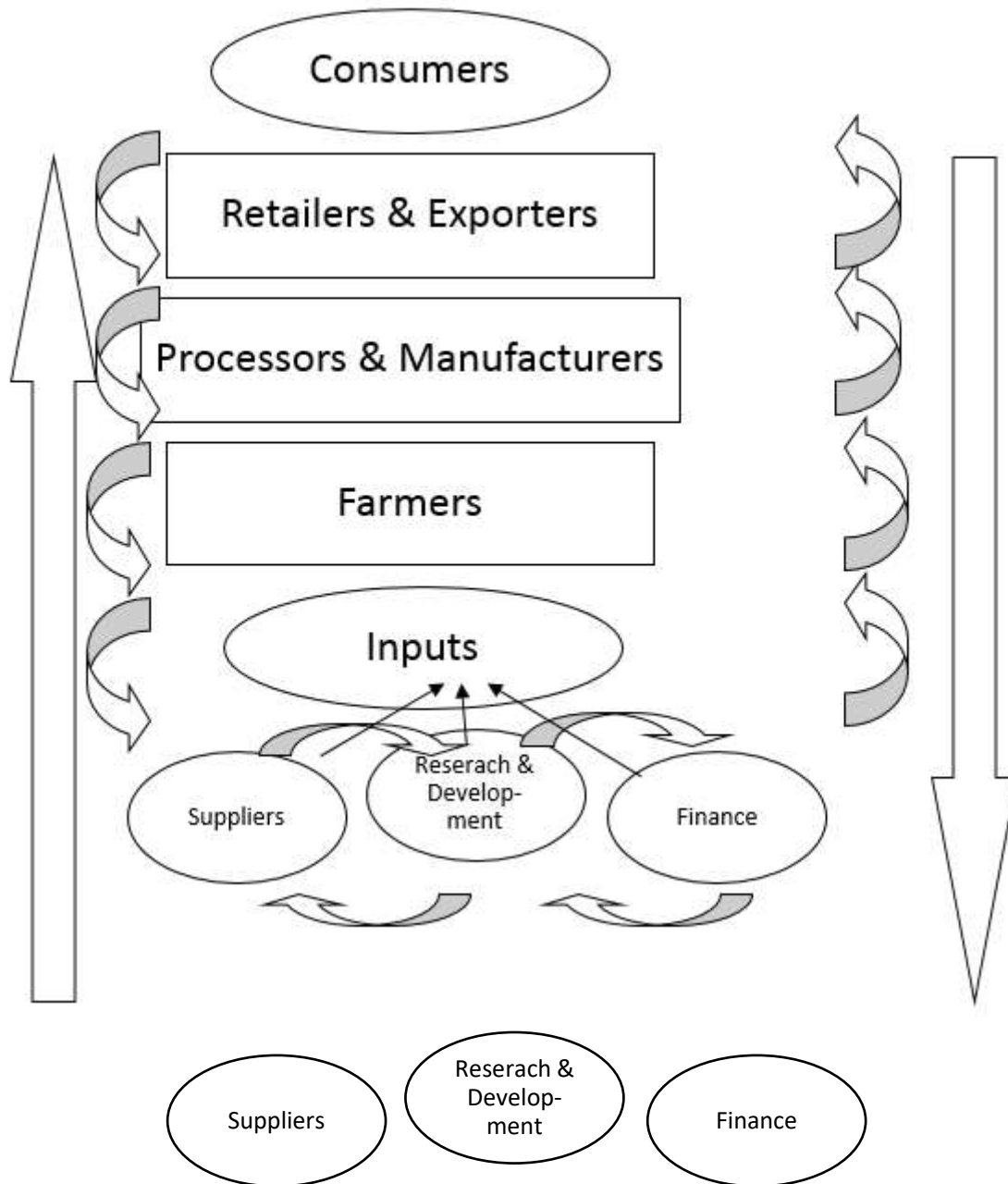
How the Value Chain Works

At its simplest, a value chain is an activity path through an organisation, outlining what and how the organisation conducts its business.

Capturing the value generated along the chain is the new approach taken by many management strategists. For example, a fruit farm that needs its products to be packed will require its pack house to be located nearby its farm. This will maintain the quality of the product and minimise the cost of transportation.

A value chain can be a very helpful tool for understanding the difference between two organisations that appear to be functioning in similar ways in the same sector. This is because organisations can construct their value chains in very different ways, thus creating a competitive advantage.

Marketing and the Food Value Chain



In a Value Chain marketing system, farmers are linked to the needs of consumers, working closely with suppliers and processors to produce the specific goods required by consumers. Using this approach, and through continuous innovation and feedback between different stages along the value chain, the farmer's market power and profitability can be enhanced. Rather than focusing profits on one or two links, players at all levels of the value chain can benefit. Well-

functioning value chains are said to be more efficient in bringing products to consumers and therefore all actors, including small-scale producers and poor consumers, should benefit from value chain development.

The market is based on integrated transactions and information. Consumers purchase products that are produced according to their preferences. The farmer becomes the core link in producing the products that the consumers desire.

Research and development, whilst including techniques targeted at increased production, is also focused on consumer needs, and attempts to take account of all of the links, and dependencies in the value chain, e.g., processing, environmental and social costs or considerations, as well factors such as health impacts, education and learning.

Communication is in both directions. It is important that both consumers and processors are made aware of factors limiting production, just as much as farmers and other producers are made aware of consumer requirements.

The value chain can help you analyse the external as well as the internal environment with regards to production and marketing.

External market analysis can include finding answers to the following questions:

- How the products you produce reach the final consumer.
- The structure (economic relationships) between players in the chain.
- How this structure is likely to change over time.
- The key threats to the entire value chain.
- The key determinants of your share of the profits created by your chain.

Internal product analysis (with the aim of marketing your product) can include finding answers to the following questions:

- How the products you produce reach the final consumer.
- The structure (economic relationships) between players in the chain.
- How this structure is likely to change over time.
- The key threats to the entire value chain.
- The key determinants of your share of the profits created by your chain.

Value chains can be used to identify sources of increased efficiency and to facilitate 'benchmarking' of how competitors create value and how their activities compare with yours. Value chain analysis has four underlying elements:

- identifying the cost of each activity
- understanding what factors are driving the costs behind each activity
- monitoring the processes of competitor organisations in relation to each activity ('bench-marking')
- understanding the linkages in the chain and horizontal strategy opportunities.

You may find that even a very simple overview of an organisation's value chain gives a great deal of insight into its relative strengths and weaknesses. It is also the case that imaginative approaches to reconstructing ('reconfiguring') the value chain can release new ways of clustering resources and therefore new types of capability within organisations.

Analysis of the value chain enables us to identify where an organisation's distinctive capabilities are based. They may arise from clear advantages functions (e.g., R& D, manufacture), or from the integration of individual functional capabilities. These distinctive capabilities give rise to core competencies, which are what make the organisation what it is. They are the key to the continued success of the institution, and effective strategies need to recognise and build on them.

Value chain analysis, together with an understanding of an organisation's key capabilities, can provide a basis for decisions about whether to integrate all stages of the value chain within the same organisation or to enter into partnerships with other organisations better equipped to deliver some of those stages. Equally, value chain analysis may allow an organisation to make decisions about whether to extend its activities up or down the value chain. Certain activities on any value chain might add a high proportion of financial value to the finished product or service: these are known as high value-added activities.

Know Your Markets, Protect Your Profits and Add Value to Your Products

- Diversify enterprises.
- Market outside the commodity supply chains and corporate vertical integrators.
- Emphasize direct marketing and premium specialty markets.
- Consider forming a cooperative with other farmers.
- Add value through on-farm processing.

The structure of the value chain will have a direct impact on you and your direct competitors' profitability.

To a large extent, the amount of profit that can be obtained by you is dependent upon the final value that your entire value chain delivers to the consumer. It is also important to realise that your value chain also competes against other value chains that may be delivering products and services to the same customers that your chain delivers to. Agricultural businesses that focus only on the firms nearest to them in the value chain are not likely to anticipate major structural changes that can dramatically impact their profitability.

No matter how you end up adding value to your farm products, these principles apply:

- Start small and grow naturally.
- Make decisions based on good records.
- Create a high-quality product.
- Follow demand-driven production.
- Get everyone involved.
- Keep informed.
- Plan for the future.
- Evaluate continuously.
- Persevere.
- Capitalise adequately.
- Focus.



Individual Activity 20

Role-Players in the Food Value Chain

The typical agricultural value chain



Source: A.T. Kearney analysis

Role of the Producer in the Value Chain

As producer the farmer plays a pivotal part of the value chain. The farmer converts inputs into outputs (e.g., fruit, wheat, milk, etc.) thereby adding value to the final product. The decisions they make regarding how to use resources (land, seed, cattle, labour, technology, soil, fertiliser, chemicals, equipment etc) and farming techniques, skills and processes will determine the value that is added at this stage in the value chain. Therefore, they should always seek to farm efficiently and effectively so as to maximise value.

Apart from focusing on the final product, value can be added by using and selling by-products from the production process. For example, peach pips can be sold to landscapers to use in gardens or inferior grade fruit can be juiced or dried for resale.

Each part of the supply chain adds value in a similar manner by using their resources, skills, techniques, etc. to add maximum value to the value chain. Value can be added by producing something, such as cheese, or by offering a service that enhances the overall value of the outputs from the values chain, e.g., marketing.

Role of Producer Organisations in the Value Chain

Producer organisations (POs), for example Milk Producers Organisation of South Africa, National Emergent Red Meat Producers Organisation, South African Sugar Association, South African Table Grape Producers' Association, Grain SA and so on, go hand in hand with the increasing attention placed on the value chains that connect farmers with consumers. Such value

chains demonstrate the interrelatedness of the production, transportation, processing, and marketing of farm products. Improving the coordination of activities of different role-players in the chain can reduce transaction costs, help guarantee product quality and safety, and enhance the design of marketing strategies. Producer organisations are considered instrumental in increasing the value generated throughout the chain, such as by ensuring that the quality of products is in line with the standard demanded. They can also mobilise support from other stakeholders and can help farmers negotiate a fair share of the total profit generated.

Major changes are taking place in the markets for agricultural products. The liberalisation of markets in many developing countries, including the dismantling of state-controlled marketing boards, has led to increased competition. The rise of international specialty value chains, such as those for organic and fair-trade products, has provided an impetus for the formation of new POs. Fair trade arrangements result in a premium price only for farmers who are organised. The growth of supermarkets as major outlets for food products has led to the restructuring of supply chains, because supermarkets tend to work with preferred suppliers that can offer them products of high volume and consistent quality. As individual producers are hardly ever large enough to supply all the stores in a supermarket chain, there is a need for organisations to collect, sort, grade and perform quality control of products from different producers.



The most recent World Development Report, *Agriculture for Development* (WDR 2008) makes the case for producer organisations as key actors in agricultural development. The report argues that they are a major part of institutional reconstruction, one that uses collective action to strengthen the position of smallholders in the markets for farm inputs and outputs. By reducing transaction costs, strengthening bargaining power and giving smallholders a voice in the policy process, POs are a fundamental building block of the agriculture for development agenda.

Enhanced product quality is key for getting market access in modern chains. POs can help their members achieve this in various ways. They can provide information to farmers about customers' quality requirements. Particularly with international chains, this includes assessing the many options for international certification schemes. POs can implement quality control systems. They can organise and facilitate innovation processes targeted at reaching higher product quality by, for instance, providing technical assistance to improve on-farm production methods. Finally, POs can go beyond facilitating the production and marketing process and take on the processing and marketing functions themselves.

Producer organisations can take many forms, ranging from formal institutions, such as cooperatives, to informal producer groups and village associations. A number of typologies have been developed that distinguish POs on the basis of their legal status, function, geographical scope and size.

Organisations that provide economic services include cooperatives that process and/or market the products of their member farmers. A typical example is the dairy cooperative, which processes the raw milk supplied by farmers into less perishable dairy products. Multipurpose PO's, particularly those at the community level, often combine economic, political and social functions. They provide farm inputs and credit to their members, process and/or market their products, offer community services and carry out advocacy activities.

POs exist at the village, regional, national, and even international level. Both commodity-specific organisations and advocacy organisations often have both local and regional/national branches. Multilayer POs are structured as federations, with the lower-level organisations being members of the higher-level organisation.

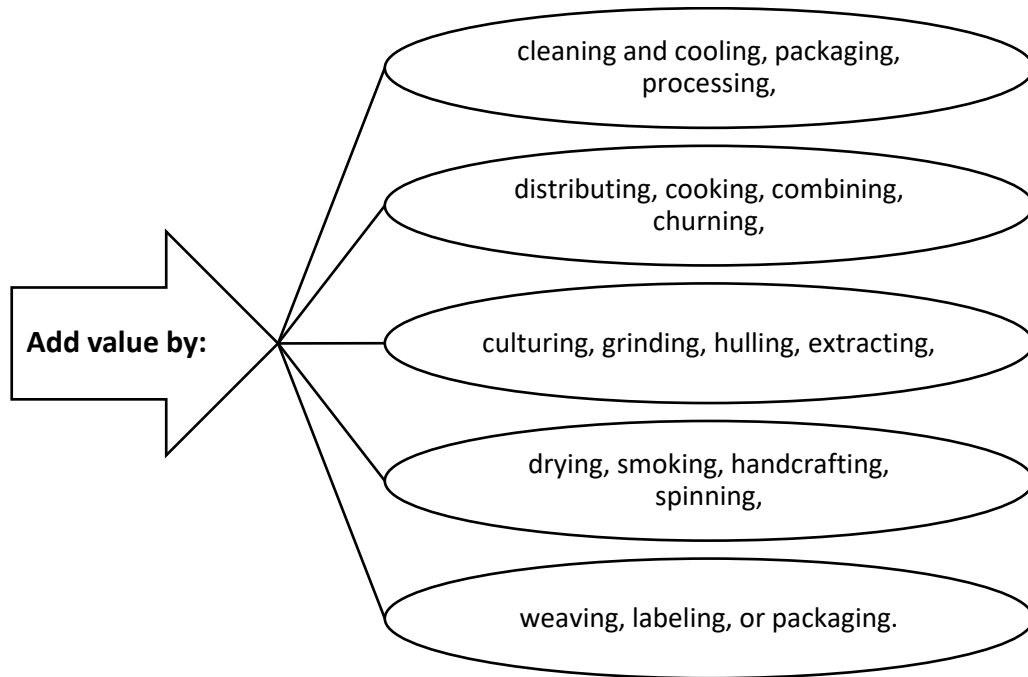


Individual Activity 21

Value-Add to Raw Product

Value added agriculture is a process of increasing the economic value and consumer appeal of an agricultural commodity. It is an alternative production and marketing strategy that requires a better understanding of the rapidly changing food industry and food safety issues, consumer preferences, business savvy, and teamwork.

The more value you add to your raw product, the more appealing it will be to customers and the more they will pay for it. As farmers struggle to find ways to increase farm income, interest in “adding value” to raw agricultural products has grown tremendously. The value of farm products can be increased in endless ways:



Today, more than ever, adding value means “selling the sizzle, not the steak.” The “sizzle” comes from information, education, entertainment, image, and other intangible attributes. Because of the many regulations involved with food processing, some people may choose to add value in other ways. On a larger scale, producer-controlled processing for energy, fibre, and other non-food uses are options. On a smaller scale, items such as flower arrangements, garlic braids, grapevine wreaths, willow baskets, wheat straw weavings, sheep and goat milk soaps, and wool mulch are a few examples. In addition, ideas for providing entertainment, information, and other services associated with direct marketing are abundant.

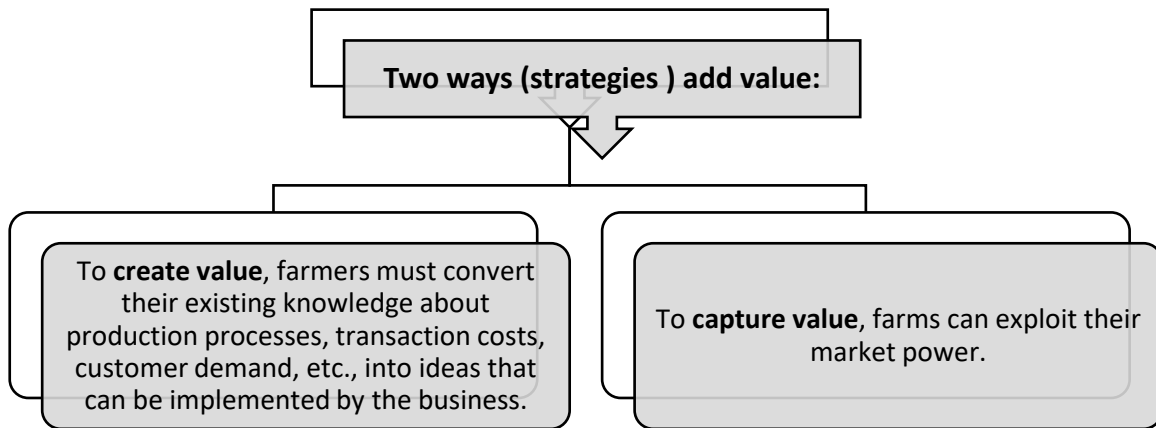
Besides offering a higher return, value-added products can open new markets, create recognition for a farm, expand the market season, and make a positive contribution to the community. However, adding value is not a panacea for all the problems rural South Africa is facing. It is a long-term approach, not a “quick fix.” It requires the willingness and ability to take on risk, as well as adequate capital, management skills, and personal skills—such as the ability to interact with the public—to succeed.

There is a difference between a strategy to capture value and a strategy to create value. This distinction is important to understand, because each strategy offers specific opportunities and risks that influence the success or failure of the value-added venture.

For producers, capturing value usually means capturing some of the value added by processing and marketing. More and more, producers are attempting to increase their share of income from food production by engaging in activities such as direct marketing to consumers, turning

farm products into food products, and joining producer alliances and cooperatives that invest in facilities to process their farm products on a larger scale.

Producers do stand to benefit from diversifying into a value-added business related to the producer's product, when the product is characterised by volatile prices at the farm-gate level but relatively steady prices at the wholesale or retail level.



With a captured-value strategy, producers may face lower production risks, because production processes are well known and often linked to traditional agricultural production. Even when producers themselves are not familiar with processing, expertise in those areas can be hired. Captured-value ventures face an extremely competitive marketing environment, where demand is high, cost and efficiency considerations are paramount, and high volumes of products must be processed to gain efficiencies of scale. These ventures are often turning commodities into different commodities and, while value is added, it may not actually be captured by the producer.

A created-value strategy, on the other hand, relies on products or services that are unique or different from the mainstream equivalent. These often include a real or perceived quality attribute such as organic certification, a brand image, identification with a specific geographic region and/or producer, identity preservation, environmental stewardship, and so on. Creating value can pose higher production risks than capturing value. It usually requires learning new production and marketing skills, dealing with food safety, labelling, and other regulations, and coping with liability issues and insurance. Demand for the innovative product or service must usually be created through advertising, promotion, and consumer education, and this is a lengthy, expensive process. Marketing risks may be lower with a created-value strategy, for if this demand can be established, there is potential for higher, stable prices and little direct competition.


On-farm events and activities offer a unique setting that cannot be copied by other producers. However, producers will need to learn new marketing skills, carefully assess feasibility, and

develop marketing plans for created-value products or services without established marketing channels.

The amount of value that can be added is affected by whether the enterprise is capturing or creating value. For example, product and market development and compliance with food safety and packaging laws all require time and money, which may be out of reach for the small producer. However, for the small-volume producer who cannot compete with the large-volume producers on price, targeting niche markets with a created-value strategy offers the highest likelihood of success.

Many producers combine aspects of both capturing and creating value in their ventures. A producer may create an unusual food product, such as local specialty bread, and sell it at the farmers' market, capturing more of the food marketing Rand. Food processors may use organic or unusual ingredients, and so on.

Whichever way you choose to add value to your raw products your goal is to charge a higher price so as to increase your revenue. Some argue that if you don't have a percentage of people walking away from you at market, you're selling too cheap. Setting a price is one of the more challenging tasks faced by all business, particularly the direct marketer. But how does one know how much a kilo of tomatoes, or a head of lettuce is worth? On what information are these pricing decisions based?



Individual Activity 22

Refer to Annexure 4: Implications of the value chain and value add to products for the farmer

Market Research

Market research is the process of gathering, analysing, and interpreting information about a market, or about a product or service to be offered for sale in that market, and about the past, present and potential customers for the product or service.

Far too few farmers and agricultural enterprises give detailed thought to exactly what they are trying to achieve through marketing. Clear marketing objectives are needed to aid operational decisions. Marketing objectives should be set with keeping the following in mind:

- Marketing objective should fit in with broader objectives of the farm.
- They should be realistic, considering internal resources and external opportunities, threats, and constraints.
- Everyone in the company should be aware of the marketing objectives so that everyone can relate these to his or her own work.
- They need to be flexible since many business decisions are made under conditions of partial ignorance.
- They should be reviewed and adapted from time to time to take changing conditions into account.

Efficient marketing is essential to the success of a farming enterprise. Producing the best quality produce is of no use if it does not meet the requirements of the market.

When considering the establishment of a farming enterprise, it is critical to ask the following questions:

- What can I produce that the market will want?
- Is there a market opportunity for the range of crops and cultivars that I can produce in my farm?

Very simply, when considering whether to embark on a new agricultural enterprise or diversify to new crops on an existing farm, the very first step is to carry out **market research**. Market research may also be required for adapting existing production processes to be able to service a different, possibly more stable or more lucrative market.

The simple questions asked above are not that easy to answer and different people have different answers to those questions. On top of this, crops produced in South Africa are marketed in many countries around the globe and today's global agricultural trade environment is one of over-supply and extensive diversity of produce.

In South Africa, Growers' Associations have been established by their farming members to research and develop the technical expertise to improve access for Southern African crops to international markets.

These growers' associations are aimed at opening new markets for South African produce as well as ensuring that existing markets are retained.

You should also remember that each of the many export markets that are accessible to South Africa are further divided into wholesale and retail sectors. The performance of these many different markets varies from year to year depending on such factors as the type and volume of competitive products.

The situation is further complicated by the fact that it is not always possible to produce high quality produce of the kind the export market requires in the specific climatic area in which the farm is located. Market opportunities for fresh produce especially are highly dependent on the quality and timing of delivery.

From a business point of view, it is advisable for a grower to spread risk of his operation, by securing a range of markets.

This can be achieved by producing a variety of crops and cultivars because:

- No produce producing area can produce the ideal quality fruit at the ideal time for all crops and cultivars; and
- Fresh fruit markets may change over the course of a season and are not always accessible to all fruit types.

Selecting crops and cultivars that are suited to specific markets given the geographical and climatic constraints is the critical challenge. For this, **high quality market research** is vital.

The Process of Market Research

The market research process involves the following key steps:

Consumer Analysis – Since all marketing plans should begin with a look at the all-important consumer, the first step is to conduct a consumer analysis. Consumer analyses identify segments or groups of consumers that have similar needs so that marketing efforts can be directly targeted at them.

Market Analysis – The second step is to carry out a market analysis. A market analyses looks at the broader view of potential consumers that could be included in the market location, size and trends.

Competition analyses – is conducted to ascertain your position as a supplier, relative to that of your competition.

Distribution Channels – Once you know where you stand in the market, you need to analyse available distribution channels and networks. The efficacy of the distribution network influences the price you can charge, whilst still making a profit.

Marketing Mix – This is followed by the development of the marketing mix that includes the well-documented five P's of marketing, being:

- Product
- Place
- Price
- Promotion
- People

Financial Analysis – Lastly the financial analysis of the marketing plan is compiled.

Resources required for market research

Market research is expensive because it requires the services of dedicated specialists. It is too expensive and impractical for every farmer to do his own market research. In the case of fresh fruit exports, the budget for carrying out such a full market analysis can run into hundreds of thousands of Rands. Farmers can form farmer groups together with exporters and jointly fund such analyses or decide to carry out only parts of the total process. This would depend on the specific objectives of the research program. Where a growers' association exists, the farmer can join such association and reap the benefits of market research and access services provided by the association. Normally the Growers association and its activities are funded through a levy that is charged on the produce sold or exported.

In most cases where an individual farmer is faced with planting decisions based on marketing prospects he will consult colleagues, technical experts, exporting companies and market agents. In this way he is able to build up enough general information to guide his decision without incurring the cost of hiring marketing professionals.

Where investment in the opening of new production areas or the launch of a new cultivar is contemplated, the market research process, whether it involves a group effort or even a relatively small-scale investigation, may require the services of specialists, either as those within an established grower association or as consultants.

Managing market research

Market research has to be managed, meaning that each stage has to be carefully planned, with appropriate target dates and milestones put in place. Out-sourced services can be costly and careful budgeting must be applied to every phase of the marketing plan. It must also be carefully decided which aspects to include and which to leave out of the process.

Once market research has been completed and a marketing plan has been developed the recommendations of the plan must be followed. Implementation does not only refer to basing decisions for new plantings on the results of the market research, but also implies the adjustment of ongoing production practices to agree with the requirements of the market.

The Marketing Mix

A **marketing plan** attempts to clarify and characterise the market, the customer and the environment in which the business is being conducted. The **marketing mix** can be viewed as the controllable part of the marketing plan. It is the farmer's responsibility to control these factors.

Often referred to as the four principles of marketing, **product, place, price** and **promotion**, as proposed in the well-known book by E. Jerome McCarthy entitled *Basic Marketing*, these four principles can be expanded to include a fifth P, being **people**. These five principles are referred to as the marketing mix. This section explores the application of these principles to the marketing of fresh farm products.



Figure 2.1: The marketing Mix

Product

The critical question that must be asked about the product is: “What is the product and its characteristics that my target market wants?”

For a farmer to succeed, the product must offer clear and distinct value to the buyer. The product characteristics must also meet those expectations of the target market. Supply and demand is the ultimate judge and jury of success.

There may seem to be little opportunity for differentiating traditional meat or staple foods: after all, meat is meat. But on closer examination it is evident that there is ample scope for product differentiation using knowledge of market opportunities as revealed by market research.

Markets differ in their preference for different meat types and specifications, and these preferences change with time.

Market differentiation can also be achieved through techniques such as organic production, distinctive packaging, and by establishing a recognisable brand for the product. A product can further differentiate itself through building up a brand reputation of good quality. Consumers will come to associate a brand name with the product and with good quality and therefore seek this in their purchases.

The way in which the product is presented is also critical. For example, where direct delivery to the retailer occurs, such as packing for Woolworths, the product and packaging specifications are prescribed in detail by the retailer, and have to be strictly adhered to.

If you are for example targeting the local processing industry, what is it that makes you an indispensable supplier to them?

If it is the bakkie trader or roadside hawker who is important to you, why would they buy your produce rather than that of your neighbour up the road?

Is your customer the impossibly difficult buyer at Pick 'n Pay or Woolworths, who in turn is trying to meet the needs of the buyers in his fresh produce section?

Or is it the buyer in Tesco's or Sainsbury's in the UK (two overseas retail groups similar to Pick 'n Pay and Spar) who is insisting on traceability, food safety standards etc, on meeting the needs of their own unique accreditation code, and in receiving product that meets the most stringent standard the world has ever known?

Each of these markets has such radically different needs and requirements, and each requires a completely different mix of product and marketing tools to successfully penetrate and maintain it.

You may be supplying these markets, but have you:

- Segmented them into the separate entities?

- Established what each one consists of?
- Identified their individual special product needs?

Place

The critical question that must be asked with regard to place is: “Where does my target market want this product?” or more critically, “How am I going to get my product to the target market?”

Place therefore has to do with the distribution networks for getting the product to the customer. It is important to analyse the distribution options, because the choice of channel influences the price you can charge, and consequently the profit you make.

Two questions should be asked to provide a basis for a decision on distribution:

- How can and should my product reach the consumer?
- How much do the players in each distribution channel profit?

By working through the answers to these questions it will become clearer how your product should be directed to the market.

The commonly used channel intermediaries to the consumer are wholesalers, distributors, sales representatives and retailers. For export fruit, distribution channels are highly specialised, and the competitive environment enables the producer to select the appropriate inland transport provider and logistics service provider at the port terminals.

Very often decisions relating to transport and logistics are the result of negotiations with the company whom the grower has chosen to export and market his product. Joint decisions are taken for instance on whether product will be shipped in containers or in reefer vessels.

Price

The critical question that must be asked with regard to price is: At what price can I sell my product to the customer to ensure the optimum sales but also the best possible profit margin?

The price at which the product is sold is critical. This is because a high proportion of the costs involved in producing and packing fresh fruit for a market are fixed. Distribution costs vary depending on who does it and where the market is located. Profit is highly dependent on the price earned in the market.

It has been said that the market price is the market price – take it or leave it. This is indeed the case in well-supplied markets where large volumes of product are moved at discount prices. In this case the retailer can exercise pressure on the supplier. In other cases, where the supplier

or grower, has a product that is generally in short supply or is particularly desired by the market, he has more bargaining power and is able to influence the selling price more easily in his favour.

When produce of a variety or specification is in abundance, it is more difficult for the farmer to negotiate any form of advanced payment or minimum guaranteed price with the buyer or his export agent. Under such circumstances, the farmer may be forced to send his produce to the market and hope for the best. This is called selling on consignment.

Before deciding what price to ask, the farmer should have in mind pricing strategy. For example, he might decide to work on a cost-plus basis, whereby he simply calculates his costs and adds a desired profit margin. The farmer might otherwise decide to try to penetrate a market by going in at a specifically low price. On the other hand, he may go in at a high price and skim the market for a short period while competitive product is absent.

Whatever pricing strategy is followed, price is a critical aspect of the marketing mix.

Promotion

The critical question that must be asked about promotion is: How can I promote my product so that my target market knows what a wonderful product I have available?

Promotion refers to communication with the customer. In its simplest form, it means message sent, message received, and message acted upon. If the product has been produced with the needs and desires of the customers in mind, the communication necessary for getting customers to buy it is through the message used to reach them.

Promotion includes all the advertising and selling efforts of the marketing plan. Goal setting is important in developing a promotional campaign. The goal is to influence buyer behaviour, and therefore the desired behaviour must be well defined. Different products require different promotional efforts to achieve different objectives.

For example, if the intention is merely to make the market aware of your product, the promotional mission will be to inform the market about the product and to communicate a 'need' message. If the intention is to generate interest in the product, a compelling message is required with the idea of solving a need. If the intention is to generate loyalty, the message should reinforce the brand or image with special promotions.

Whether the idea is to pull buyers to a sales outlet or to push a retailer to stock and sell, there are five general categories of promotional effort, being:

- Advertising;

- Personal selling;
- Sales promotion;
- Public relations;
- Publicity; and
- Direct selling

There are many techniques for implementing promotional efforts. In the case of promoting the sale of fresh fruit, much depends on the specific market and market segment, and on whether the promotional campaign is generic to a fruit type and farmer community, or highly specific and applicable only to fruit of a cultivar from a particular farmer at a particular time. Promotions may also take the form of general media messages, or so-called above-the-line promotions, or price discounts and in-store promotions, referred to as below-the-line.

Promotions are communication tools. Which, how and when these tools are used depend on specific circumstances.

All of the above is achieved through people

The critical question that must be asked with regard to people is: Who do I need and how do I need to manage my workforce to achieve the requirements of the market?

Neither efficient production nor any of the above components of the marketing mix can be achieved without a productive and motivated workforce.



Marketing budgets

Marketing is more than just selling and advertising of goods to customers. It is satisfying the needs and persuading them to buy more products.

Effective marketing of any farm starts with a plan of how this will be achieved through, for example, promotion of the product, advertising and public relations.

Marketing objectives should not be set until all relevant information on the product, the market and the consumer is available. Consumer behaviour and motivation must be thoroughly assessed.

Once marketing objectives has been set, an **implementation plan** is developed. The marketing plan should have promotion of the product as an integral part. It must then be decided what basic message is to be delivered, to the target audience and what the intended effects may be.

Once the decision has been taken on what needs to be done and how, a **marketing budget** can be developed. A marketing budget tells us the funds that will be required to finance the marketing plan. Furthermore, the budget will also determine how and when the money will be spent. The marketing budget indicates the affordability of the plan and how its execution will impact on monthly cash-flow.

The marketing budget can therefore indicate how the marketing plan measures up to selected benchmarks and whether the plan can be carried out as designed, or whether it has to be modified or trimmed in some way.

The marketing budget provides vital information for decision-making regarding the wisdom of committing funds to such issues as promotion, advertising and public relations.

Components of a marketing budget

You need to decide how much money you intend to invest in marketing as a percentage of your projected gross sales. You can break it down on a monthly, quarterly or annual basis.

Ideally you will have already determined the amount of your marketing budget when you have created your farm's various financial statements. The figure you will choose will depend greatly on your type of business on the farm and your goals.

Short, medium and long-term budgets

Creating awareness of and loyalty to a brand or trade name takes time. Confidence in a product is normally built-up over a period of several years, and provision has to be made in the marketing plan and budget for ongoing activities.

When an investment has been made in entering a product into the market, it is unwise not to continue bringing its unique attributes to the notice of potential buyers. The ongoing promotion of the Coca-Cola brand is a good example of this. It is necessary therefore to make provision in marketing planning and budgeting for marketing activities and costs of a long-term nature.

Other costs and activities are of a medium- and short-term nature. Most often such plans and the resultant costs will be governed by the current state of the market and its perceived response to below-the-line promotional activities.

Monitoring the budget

It is the responsibility of the farmer to monitor the budget during which there is an ongoing comparison of actual expenditure against the budget.

Marketing activities is an expenditure that adds value to your farming business. It should not however, be that expensive so that the profit you make on your produce decreases.

Market Distribution Channel

For fresh produce in particular, the distribution channel refers to the way and means by which the farm product is moved from the farm to the market. The mechanisms used vary depending on where the market is located in relation to the farm and on the requirements of the market. Commonly used distribution channels include wholesalers, distributors, sales representatives and retailers.

The preferred packaging required by the target market for fresh farm products is an important role in the choice of distribution channel. Meat destined for the local wholesale market is usually packed either into jute or plastic pockets, usually in 500g, 1 kg, 10kg or 5kg units, or into 15kg cartons. Cartons are stacked onto wooden palletised and transported by road or rail. Pockets are either stacked directly into trucks or palletised for the journey to the market.

Informal traders who collect meat directly from the pack house in their own vehicles may load cattle or meat loose into their vehicles.

Meat for export is packed into specified cartons, with dimensions that are configured for palletisation. Stacked pallets are either loaded onto vehicles or rail trucks, or into shipping containers at the pack house.

We can now see that there are many different forms and ways in which fresh farm products leave the farm for their journey to the market. Some products are transported following a cold chain.

The farmer or pack house decide which markets to serve, ensure that the packaging form is aligned with market requirements and is cost effectively utilised. The farmer or pack house then decide, alone or in consultation with the market agent or exporting company, how the product will be transported to the market or port terminal.

In the case of exports, decisions also have to be taken about which logistics service provider and shipping company to use. The cost of transporting the product to the markets of choice in good condition depends on the efficiency and capability of the agencies used.

Deciding on which logistics service provider in the distribution channel to use depends on:

- The ability to provide the desired service
- The reputation of the service
- The cost of the service

Transport MODES

The choice of distribution mode has cost implications and therefore has an influence on the distribution budget.

The farmer or pack house has to decide which mode of transport to use to convey the packed product to the market. Cost is the main consideration in making this decision, but not the only one. Other factors include the practicality, reliability, reputation, and general standard of service delivery associated with the different modes of transport and transport contractors.

Export fruit has to be transported from the pack house to a local depot or port, from there to an overseas port, and from the overseas port to an overseas depot or market. Different modes of transport are in most cases used for the different sectors of this journey.

The inland part of the transport leg can be completed by road or rail, or a combination of the two, depending largely on where the pack house is located. Almost all cooperative pack houses and some independently run pack houses are located on rail sidings, in which case rail transport is the logical option. However, in many instances, poor rail services, as a result of unreliable

capacity, time delays and uncompetitive tariffs, have resulted in road transport being more attractive. Ultimately, market forces will determine what mode of transport is used.

Before the 1980's, a high proportion of farm products were transported from the interior of the country by rail. Today the situation is very different, with a much higher proportion being transported by road, simply as a result of competitive rates and service delivery requirements driving producer decisions.

Sea freight accounts for virtually 100% of the transport mode used to convey farm products from South Africa to its various export markets. This is even the case with African markets other than those with borders close to South Africa.

On rare occasions air freight is used for exports, but this is usually early in the season of a popular cultivar, when a producer and his export agent decide to be the first on a poorly supplied market. Speciality crops that are placed into niche markets are often transported by air. An example of this is air freighting of blueberries from South Africa to the UK. South African Blueberry exports occur in the months where blueberry is not harvested in Europe. The consumers are then willing to pay a "levy" on the produce. In some instances, market prices may, for a short period of time (days), justify the high cost of airfreight.

On arrival at overseas ports, the palletised farm product is conveyed most often by road transport to depots or directly to retailers in the case of supermarkets.

In the case of locally marketed fresh farm products, depending on the quantities of produce involved, the proximity of rail stations, the location and nature of the market to which the products are being sent, and the price quoted, either road or rail is used. Since relatively small volumes of product are sent by any single producer to any specific market, road is the most commonly used transport mode.

Marketing Information Systems

A system that analyses and assesses marketing information, gathered continuously from sources inside and outside an organization. Timely marketing information provides basis for decisions such as product development or improvement, pricing, packaging, distribution, media selection, and promotion. See also market information system.

For a farmer to achieve the best marketing results, the information about what is happening in the market, with regards to supply and demand, is of great importance. Several private, government and non-profit organisations have embarked on developing Market Information Systems, to furnish the farmer with up-to-date Information regarding market conditions.

Agricultural market information is essential for farmers who wish to become fully market orientated and ensure that their production is in line with market demand. The availability of reliable market information can help farmers to reduce the risks associated with marketing, decide where to sell their produce, check whether or not the prices they are offered are in line with market prices, decide whether or not to store, grow produce “out of season” or grow different products.

Reliable market information also improves market transparency and farmers’ bargaining power. Farmers are interested in market information on product prices, price trends and buyers for their products. Farmers can use market information in several ways.

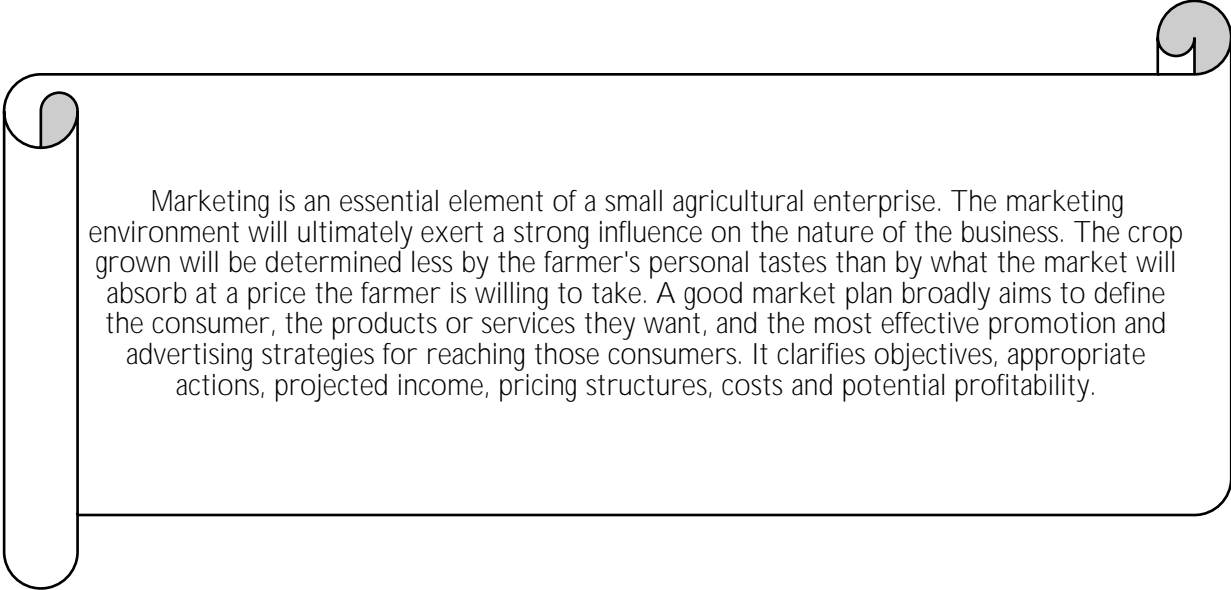
- Current or immediate, information can be used first to decide what to produce and to negotiate with buyers or traders, to decide whether or not to go to a market and, in some cases, to decide which market to supply.
- Historical information, such as time series of prices over several years, can be used to make decisions regarding product diversification or the production of out-of-season crops. It may even help farmers identify opportunities for a cash income.

Refer to Annexure 5: Dept Of Agriculture Guide On Market Information Systems

Product Marketing Structures and Opportunities

Farmers have several alternatives when it comes to marketing their products. In this session we will explore different marketing structures and opportunities that are available to you.

Many farmers, especially new ones, are inclined to start production without giving a second thought to the business of marketing. Good marketing is an absolute must for a successful agricultural enterprise. Some would even argue that it ranks higher in importance than production itself—especially for farmers planning to diversify. After all, what good is a product if one cannot sell it consistently for a profit?



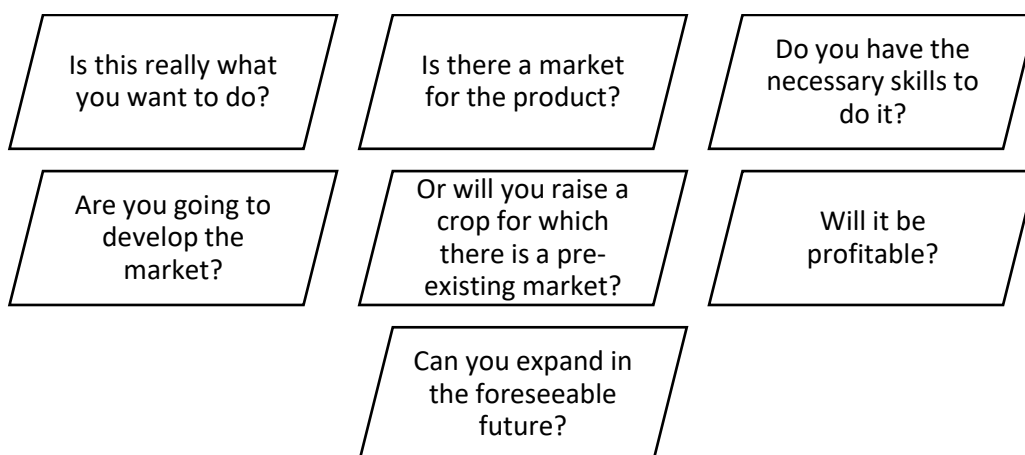
Marketing is an essential element of a small agricultural enterprise. The marketing environment will ultimately exert a strong influence on the nature of the business. The crop grown will be determined less by the farmer's personal tastes than by what the market will absorb at a price the farmer is willing to take. A good market plan broadly aims to define the consumer, the products or services they want, and the most effective promotion and advertising strategies for reaching those consumers. It clarifies objectives, appropriate actions, projected income, pricing structures, costs and potential profitability.

The structure that you choose will depend on the opportunities that you wish to take advantage of. First, you will need to decide what market(s) you are going to focus on. You may focus on the local, regional, national or international markets. Or you may choose to concentrate on more than one market. Each of these markets has its own structures and consumers within them have their own needs that you will seek to satisfy. For example, if you decide to enter into an international market you will need to find out what the legal and market requirements are for your products, including, quality, volumes, packaging and other legal requirements such as licences. It will be more difficult to enter into international markets than to enter into your local market, but the financial rewards may be greater.

Many farmers think of marketing as simply how to dispose of their products. Locked into producing a very small number of major crops and insulated from the market, they have not been required to have a clear understanding of ever-changing consumer wants and needs.

A good marketing strategy begins with making sure the enterprise is right for you and is feasible. This will require a review and evaluation of your present situation, goals, possible enterprises, physical, financial and marketing resources, and market potential.

The evaluation should help you answer some key questions, chiefly:



Refer to Annexure 6 : Small-holder farmer Marketing Channels

Refer to Annexure 7: Cooperative Marketing

Investigating Local Market Opportunities

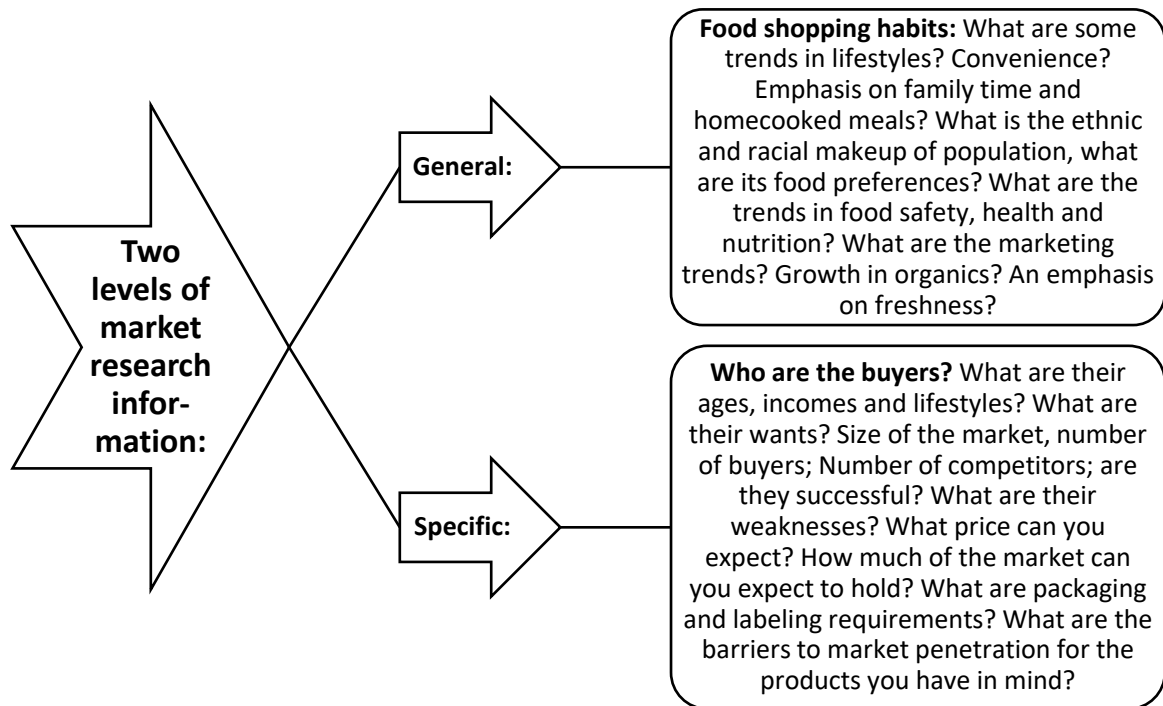


If you have decided to focus on the local market talk to your Extension Officer, visit the local shops (gourmet and otherwise) and supermarkets to see what is selling, and why one product appears more appealing than another. Talk to customers, local stores, food clubs, specialty distributors, restaurants and other prospective outlets in your region. What do they want? Is there an unfilled niche? With your production, labour and marketing resources, will you be able to fill this niche?

Find out what your prospective competitors are doing. Look for ways to improve upon what they are offering.

Information from market research helps to formulate a market strategy and project profitability.

Two levels of information may be obtained:



You can either start small and grow bit by bit or you can start in a big way from the very beginning. Either way, you must be prepared to do your homework and get to know your markets to be successful.

Conventional marketing wisdom has it that 80% of sales come from 20% of customer base. The grower must build a core customer base and let them know how important they are. Word-of-mouth advertising is the most effective and inexpensive way to attract new customers. Stay on top of consumer trends. The best-made product in the world will not sell if it isn't something people want.

Education of the consumer plays a big part in salesmanship. Most people, for instance, are oblivious to the environmental and health benefits of livestock raised on forage. Conveying information about the farm, how the product is raised and why it is raised the way it is, the effect of recent weather on the crops, and other farm-centred conversation is important. Not only is this good for business, it also is a small step toward the development of consumer awareness of the farm and of social and health issues. Once customers know that you are providing healthy food, they gladly take on the responsibility to support local farmers. Help them help you run your business successfully and profitably.

Investigating International Market Opportunities



The export market is very important for South African agriculture. In theory it should be very easy to determine demand. After all there are numerous companies around the globe that conduct research and gather consumer data. This data would, for example, show that the consumption of oranges per person in EU countries has remained constant for the past 20 years, whereas in Japan it has increased. Add to this data about population growth and it should be quite easy to determine the market potential for a product in a given period. The complexity of determining future demand arises when one considers constantly changing consumer preferences for specific cultivars and type, the impact of competitive products, changes in disposable income, and other external factors.

The key to success lies in knowing the competition, understanding the impact of emerging trends on consumer behaviour, and being aware of consumer preferences in specific markets. This enables the most appropriate product to be supplied at the most appropriate time to differentiate your business from that of the competition.

With annual crops such as vegetables or grain, it is possible to change areas planted and crop type from year to year in response to predictions based on current and expected demand / supply balances. Other crops do not have the same flexibility. For example, citrus is a long-term crop. The productive lifespan of an orchard greatly exceeds the speed at which shifts in consumer trends, competitive actions and other factors impact on demand. This means that sound decisions on what areas to plant, with what cultivars and in what ratios, should only be taken after analysing available market trends and extrapolating, interpreting and integrating such relevant information from a number of reliable sources.

However, short-term adjustments to supply patterns also have to be made based on prevailing and anticipated market forces within any particular season. This means that the producer has to contend with two sets of circumstances:

- He has to decide what volumes of fruit to send into the various export market segments within a specific season. In this context the term 'market segment' is used broadly to cover differences between retail and wholesale markets within a single country as well as markets in different countries.
- He has to consider the development of long-term planting (production) and demand (market) trends of local and competing global citrus industries, or at least sectors of these industries.

In the first case, the production manager, through close liaison with his export agent, tracks weekly, if not daily, fruit supplies from other local producers and from competing countries and monitor the movement of this product into the markets in which he has an interest. He attempts to assess the quality and volumes of their product against his own supplies in the knowledge that oversupply weakens a market and influences perceptions about the quality of the product in that market. For example, when a market is fully supplied yet has confidence in the shelf-life and quality of the available fruit, demand is likely to remain firm. If, on the other hand, the market suspects that the condition of the product is deteriorating, demand will weaken as the market becomes increasingly pessimistic about the likely value of the product by the expected consumption date. This can lead to a downward spiral in market confidence in own and competitive products resulting in slow sales, the accumulation of increasingly poor-quality product and plummeting prices.

All such factors need to be taken into account by management to inform short-term decisions when switches of product supply into different market segments within a single production season are being considered.

Long-term demand / supply trends and extrapolations are used to inform long-term decisions, such as whether or not to channel resources into expansion or land acquisition actions given present and expected future changes to the operating environment. To arrive at such decisions strategic planning exercises are carried out.

Strategic planning is traditionally focused on setting the action plans to attain long-term objectives, taking into account current realities and expected future influencing factors. Successful strategic planning however requires information relating to both short-term influencing factors and long-term trends.

At the two extremes lie long range strategic decision-making on the one hand, and ultra-short-term weekly adjustments to harvesting, delivery and distribution patterns aimed at optimising intra-seasonal returns, on the other. Somewhere in between lies the response of the producer to certain opportunities that may arise and can be exploited. Such opportunities can come in the form of the opening of a new export market or a growing demand in certain market segments for organic or Fairtrade products.

Marketing Through Cooperative Structures- Pros and Cons and How it Works



There are two primary types of agricultural service cooperatives, *supply cooperative* and *marketing cooperative*. Marketing cooperatives are established by farmers to undertake transformation, packaging, distribution, and marketing of farm products (both crop and livestock).

Cooperatives can add value to individual businesses and to the value chain as a whole by marketing the products of their member farmers. This is the ideal arrangement where individual farmers do not have the resources or knowledge to market their own products. In that case they can pool resources and get the economies of scale that large agricultural businesses have, thereby overcoming the 'curse of smallness'.

Producers and their cooperatives are selling into markets increasingly dominated by fewer, larger buyers. A variety of ownership and contractual arrangements intensifies concentration and creates a dramatic disparity in market power. Even the largest agricultural cooperatives have much smaller sales and asset bases than many of their competitors and customers. They have to

seek added value for their members in other ways, for example, by identifying niche markets and focusing their marketing efforts on them.

There are other negative factors associated with cooperatives. Some issues arise because members vary in size and motivation. This makes it difficult to please all members. For example, commercial-scale producers may expect discounts on supply purchases and special services because such benefits are offered by other businesses. The costs of doing business through a multi-level supply cooperative come under real scrutiny when a farmer can order chemicals, for example, directly from the manufacturer and have them delivered for less total cost.

In turn small producers sometimes resist what they see as efforts by larger producer-members to control the organization. Large cooperatives may be inflexible and individual members may miss out on marketing opportunities because they are not able to respond to them in time because of their commitment to the cooperative.

Each member brings a specific set of interests and demands to the cooperative. Leaders and advisers of cooperatives must find ways to blend this diverse base of farmers into a membership with a cohesive business interest in their cooperative.

Two themes permeate strategies for cooperatives to succeed in the 21st century. The first is that greater investment is needed in the people who make up cooperatives. Members, directors, managers, and advisers must receive the training required to deal with 21st century issues. Otherwise, they will neither completely understand the options available nor have the ability to analyse them and make sound business decisions. The second is that an emphasis must be placed on pragmatism and profitability. Cooperatives are businesses and in the years ahead they must focus on solving business problems and providing value to their members. If they don't, members will stop patronizing them and they will just fade away.

Direct Selling From the Farm – Pro and Con's




It is the excesses of the conventional marketing system that have forced the return of direct marketing. Consumers tired of tasteless supermarket produce and factory-raised meat (and with increasing concerns about food safety issues) want fresh food with flavour, as well as more control over their food supply, and are willing to pay a premium price for it.

Direct marketing can give the farmer a larger share of the food Rand and possibly a higher return on each unit sold, offset to some extent by loss of economies of scale. For some farmers, adding value or marketing some minimally processed farm products directly to the consumer is a way of enhancing financial viability. Farmers who are unable to compete in, or are locked out of, distant markets can build a thriving local business.

However, finding the right niche and marketing directly to the public is a hard and labour-intensive job requiring time and effort, creativity, ingenuity, sales expertise, and the ability to deal with people in a pleasant and positive manner. Agricultural producers must be absolutely sure they are ready for the job.

The one advantage that direct marketers have over retailers is the ability to build their relationships with customers over time. Indeed, good marketing is about building trust and personal loyalty in the relationship. Good sellers know and use the customer's name. Consumers who feel an emotional bond to the grower are likely to remain loyal, even though the product is available at the grocery store at a cheaper price.

Refer to Annexure 8: To read more about other Non-conventional markets.



Individual Activity 23

Niche Markets



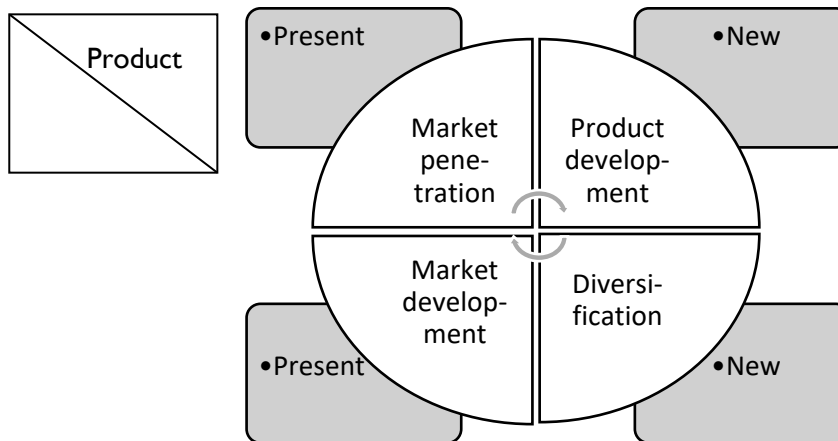
A **niche market** is the subset of the market on which a specific product is focusing; therefore, the market niche defines the specific product features aimed at satisfying specific market needs, as well as the price range, production quality and the demographics that is intended to impact.

Niche marketing is servicing a portion of a unique market, or a unique portion of a common market, not already served.

Refer to Annexure 9: Examples of Niche Markets in Agriculture

Developing a Market Matrix

Ansoff's Matrix is a well-known marketing tool. It is used by marketers who have objectives for growth. It offers strategic choices to achieve growth objectives. There are four main categories for selection.



The different quadrants may be described as follows:

Market Penetration

Here we market our existing products to our existing customers. This means increasing our revenue by, for example, promoting the product, repositioning the brand, and so on. However, the product is not altered, and we do not seek any new customers.

Market Development

Here we market our existing product range in a new market. This means that the product remains the same, but it is marketed to a new audience. Exporting the product, or marketing it in a new region are examples of market development.

Product Development

This is a new product to be marketed to our existing customers. Here we develop and innovate new product offerings to replace existing ones. Such products are then marketed to our existing customers.

Diversification

This is where we market completely new products to new customers. There are two types of diversification, namely related and unrelated diversification. Related diversification means that

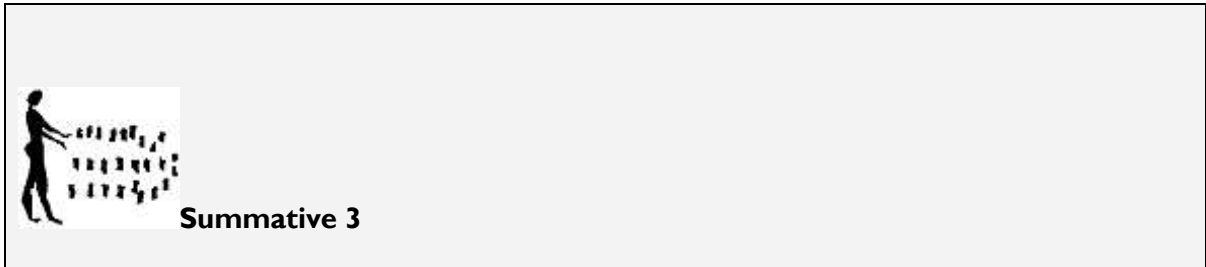
we remain in a market or industry with which we are familiar. Unrelated diversification is where we have no previous industry or market experience.

Ansoff's matrix is one of the most well know frameworks for deciding upon strategies for growth.

Marketing Plan Template

This is a comprehensive market plan that would set out your marketing strategy. Some (or many of the sections) may not be appropriate for your farm. However, familiarise yourself with its contents and you will gain a good understanding of the types of factors you will have to consider in developing your own marketing strategy.

Refer to Annexure 10: Marketing plan template



Learning Unit 4

Communication skills

Unit Standard	
119466	Interpret a variety of literary texts
Specific Outcomes	
SO 1: Extract meaning from a variety of literary texts.	
SO 2: Identify and explain features that influence response to texts.	
SO 3: Produce own texts in response to literary texts.	
Learning Outcomes	
Identifying	
Working	
Organise	
Unit Standard	
119457	Interpret and use information from texts
Specific Outcomes	
SO 1: Use a range of reading and viewing strategies to understand the literal meaning of specific texts	
SO 2: Use strategies for extracting implicit messages in texts.	
SO 3: Respond to selected texts in a manner appropriate to the context.	
SO 4: Explore and explain how language structures and features may influence a reader.	

Learning Outcomes	
Identifying	
Working	
Organise	
Unit Standard	
119465	Write texts for a range of communicative contexts
Specific Outcomes	
SO 1: Write for a specified audience and purpose.	
SO 2: Use language structures and features.	
SO 3: Draft own writing and edit to improve clarity and correctness.	
Learning Outcomes	
Identifying	
Working	
Organise	

Unfamiliar Words

What do we do when we come across a word we do not understand? We are going to explore techniques you can use in order to understand the exact (literal) meaning of certain unfamiliar words in a piece of writing or part of a talk. If a word is unfamiliar to us there are certain strategies or techniques we can use to help us make an intelligent guess at what the meaning of the word is.

In order to do this, we need to know a little bit about how sentences are structured.

Syntax

The word syntax can be defined as the organisation of words in sentences the ordering of and relationship between the words and other structural elements in phrases and sentences.

Look at the difference between these two sentences:

- Drinking water from the streams is very dangerous as the run-off from mines and commercial farms have poisoned a lot of rivers.
- Commercial farms and mines run-off drinking water from very dangerous streams, which have poisoned a lot of rivers.

The orders in which we have placed the words, the syntax, have made all the difference in meaning between the two sentences.

Now look at this sentence:

- Themba was playing a pleasant tune on the mbiro when his mother called him.

We may not know what the word "mbiro" means but from where it is in the sentence we can guess that it is an object of some sort. It is a musical instrument which may be described as a 'thumb piano' and is of sub-Saharan origin. We can thus see how syntax gives us some clue as to the meaning of an unfamiliar word.

Word Attack

Another useful strategy for trying to understand what an unfamiliar word means is word-attack skills. Word-attack skills refer to looking at the unfamiliar word in its context, and trying to see what you can work out from the context and the syntax and any other clues, such as capital letters, to help you understand the word.

An example could be the word 'agri business'.

Imagine you've never heard the word before and hear the following sentence: "The statistics for the production of wheat was poor compared to last year in the agribusiness"

Now you could do a word attack on "agribusiness" by thinking of its parts. We are familiar with "agri" from terms like "agriculture" which we associate with farming. We also know the word "business" as referring to trade, industry or a company. So, we could guess that 'agribusiness' is something, which could be seen as a group of industries or trade dealing with farm produce and services.

Context

Context can be defined as the text surrounding a word or passage; the words, phrases, or passages that come before and after a particular word or passage in a speech or piece of writing. The context helps to explain the word's full meaning.

When we looked at the word "agribusiness" the context in which it was used also helped us guess at its meaning. We picked up clues from the fact that it was connected to agriculture and farming and concerned with trade.

Unfamiliar Words

Sometimes we borrow words from another language. Borrowed words are foreign words and we can usually only use the context and syntax in our word-attack to try and work out what they mean, as the parts of the word will not be familiar to us.

Look at the syntax, and context in which the word that is in bold is used. Use your word attack skills to try and work out what it means if you are unfamiliar with the word.

- Escargot is my favourite dish" said Francois.
- My hunger was satisfied with the ostrich biltong which was so lekker.
- I would rather watch flamenco than classical ballet.
- Will you be having the legumes and chips with your steak?
- That gogo must be over 80 years old.
- These samoosas are delicious.
- We survived poverty through sharing and ubuntu.

- We can see from the context and syntax that **escargot** refers to a food item. It is in fact French for snails.
- We can see from the context and syntax that **biltong** is a food. This is derived from Afrikaans and is dried raw meat. 'Lekker' is Afrikaans for delicious.
- We can see from the context and syntax that **flamenco** refers to a type of performance. It is a Spanish word describing a particular style of dancing.
- We can see from the context that **legumes** are a type of food to be eaten with steak. Legumes in French means vegetables.
- We can see from the context and syntax that **gogo** refers to an old person. It means granny in Zulu.
- We can see that **samosas** refer to a food item. It is an Urdu (Indian) word for a spicy delicacy that is triangular.
- We can see that poverty was alleviated through ubuntu. **Ubuntu** is a Xhosa word for family/friends helping each other in all circumstances.

Complex Terms

A complex term is a word made up of more than one word in order to combine two ideas together. Complex is the opposite of simple; it means having many parts made up of many interrelated parts.

We all know what marine means and we know what biology means. Marine Biology is the specific complex term used to refer to the study of life forms that are related to the sea and coast.



Individual Activity 24

Acronyms

An **acronym** can be defined as a word formed from initials; or parts of several words.

Example

'NATO', from the initial letters of 'North Atlantic Treaty Organization'.

The context will usually help us understand what the acronym might be referring to, whether it is an organization or a group of people. Sometimes we use acronym without knowing what the individual letters stand for.

For example: we talk about SMS-ing somebody. Did you know that SMS stands for Short Message System?

Did you know that e-mail stands for electronic mail?

Do you know what AIDS stands for?

Neologism

A **neologism** can be defined as a new word or meaning, or a recently coined word or phrase.

An example is the word 'hoover'.

This was the name of a popular make of vacuum cleaner in the 1950's that then started to be used as a word in its own right, meaning 'to clean with a vacuum cleaner' as in "I will Hoover the room with the Electrolux."

Colloquialisms and Slang

A colloquialism is an informal expression; an informal word or phrase that is more usual in conversation than in formal speech or writing.

e.g. "I am beat" meaning I am tired;

"I am now finished and klaar" also meaning "I am tired." or "I want to give up".

Slang is also an informal manner of speech. Slang can be defined in two ways, firstly as very casual speech or writing when words, or expressions, are casual, or playful replacements for standard ones; slang words or phrases are often short-lived, and are usually considered unsuitable for formal contexts. Secondly, it can be defined as language of an exclusive group; a form of language used by a particular group of people, often deliberately created and used to exclude people outside the group, e.g., "hang ten" is a phrase that comes from surfers' slang.

We all use colloquialisms and slang in our ordinary day-to-day speech and also in emails or other forms of written communication to our friends and family. In the formal settings however we should guard against using them to our superiors and to our colleagues. In the professional world it is more acceptable to use more formal standard ways of expressing ourselves, whether in writing or in oral communication. As always we need to be aware of our audience (listeners).

Jargon

Jargon can be defined as specialist language; it is language that is used by a particular group, profession, or culture, especially when the words and phrases are not understood or used by other people, e.g., farmers' jargon, or medical jargon.

Jargon is not a good way of communicating with the general public. Often the words used are so specialized that unless we are familiar with the field it is very difficult for a person off the street to work out what is meant by something. If we are with people who are in the same profession or a group of friends who share the same hobby, it is perfectly acceptable to use jargon.

Read this extract that is aimed at people in the computer field (the jargon is in bold) "Many people use **MWEB** as their **ISP**. When doing a search on the **net** you may just want to browse. If the page is written in **Java** or in **HTML** then you can scroll up and down. You can also download on to a **floppy** or stiffer. A frustrating thing that happens is when the **URL** can't be located, even though you have done a good search with keywords, or the **server** is **down**".

How much did you understand? If you are very computer literate you may have understood quite a bit. If you know little about computers or the Internet this talk would not have meant very much to you. This is an example of jargon.

Can you think of ways that could help you understand this better? You could ask someone who is an expert, or you could find a good reference book to explain these terms.

Remember, do not get intimidated by jargon. If someone like a doctor or a salesperson uses jargon that you do not understand you should always ask for a clear explanation. Now think of a field in which you know quite a bit, such as plant growing techniques. Do you ever use jargon that would not be understood by people outside this field? How do you think it makes your listener (audience) feel?

Dialects

A dialect can be defined as a regional variety of language, with differences in vocabulary, grammar, and pronunciation e.g. In the United Kingdom there are many different dialects such as Scottish, Irish, Welsh, Cockney etc. South African English as used by native English speakers can be seen as a single dialect with the main differences being in accent.

South African English as used by native English speakers can be seen as a single dialect with the main differences being in accent. It is not very different from standard (British) English although a number of different dialects have been identified with non-native speakers, these include a number of varieties of 'township'

English and the Cape Flats dialect (although this is a mixture of English and Afrikaans).

It is not very different from standard (British) English although a number of different dialects have been identified with non-native speakers, these include a number of varieties of 'township' English and the Cape Flats dialect (although this is a mixture of English and Afrikaans).

Here is an example of Standard English "translated" into Scottish dialect.

- "We are having a great time and are learning to communicate better in South African English."
- "We ur havin' a braw time an' ur learnin' tae communicate better in sooth african sassenach" .

Here is an example of Standard English "translated" into an Ali G dialect:

- "Hallo everybody! What are you up to on this fine day ?"
- "Alo everyone! wot iz yous up to on dis wicked day?"

Could you have used your word-attack skills to work out what "braw", "sassenach", and "wicked" mean in this context?



Group Activity 25

Ambiguous Words

Ambiguous words are words that have more than one meaning. A word, phrase, sentence, or other communication is called ambiguous if it can be reasonably interpreted in more than one way. The simplest case is a single word with more than one sense.

Let us look at the word "bank", for example, which can mean "financial institution" or the "edge of a river". Sometimes this is not a serious problem because a word that is ambiguous by itself is often clear in the particular context in which it is used. Someone who says "I deposited R100 in the bank" is unlikely to mean that she buried the money beside a river!

Look at these sentences. They will not make sense in terms of the word in bold (which has more than one meaning) unless we know the context.

Summarizing and Paraphrasing

Paraphrase is to rephrase and simplify; to restate something using other words, especially in order to make it simpler or shorter

Example
 "he was suffering from an acute case of influenza and thus absented himself from his place of learning",
 Could be much more simply put as:
 "he had bad flu and so didn't come to college".

Summarize is to make a summary; to make or give a shortened version of something that has been said or written, stating its main points.

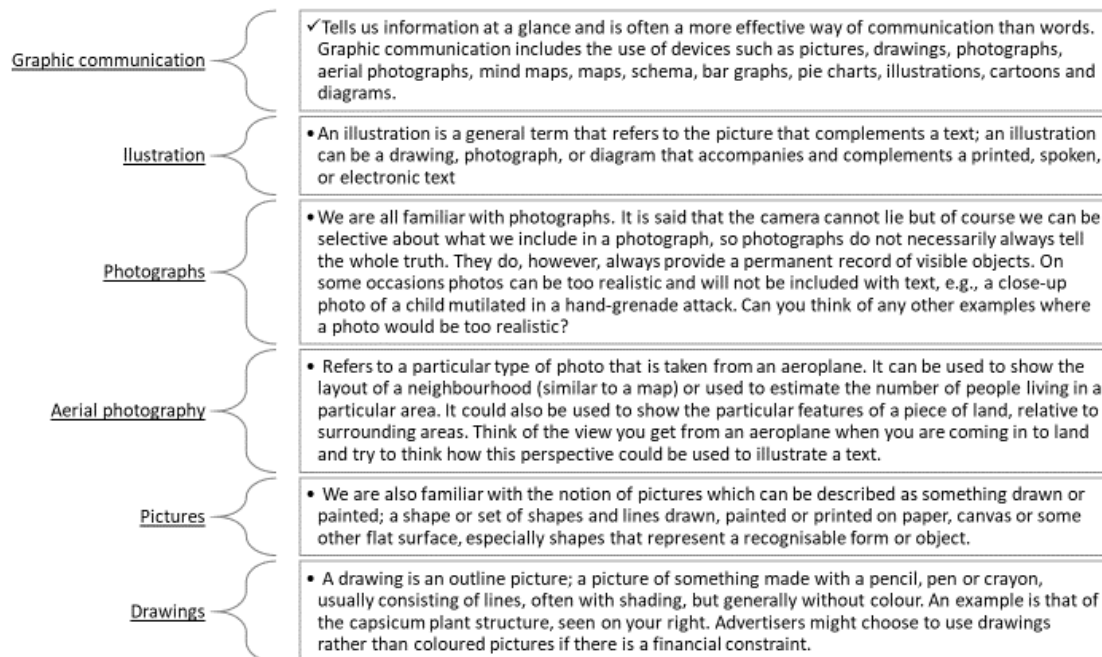
Example:
 "The farm could have been over a million acres, it looked as if it could stretch to outer space"
 Can be summarised as:
 "the farm was very big"

In order to paraphrase (and summarize) we need to be able to separate the main ideas from the supporting evidence used as examples or additional material.

Refer to Annexure II: Practice summary/paraphrasing

Graphic and Visual aids

Graphic representations are a form of non-verbal communication.



Sometimes it might also be felt that a coloured picture is too distracting, so in certain textbooks or reference books a simple drawing might be chosen. Next time you see a drawing ask yourself whether a more detailed coloured picture would improve the message or detract from the point of the illustration.

Refer to Annexure 12: Different graphic tools applied to give context to text

Accommodate Audience in Oral and Written Communication





Accommodate audience/ reader and context needs in oral and written communication




Source of Text

We are exposed to a range of texts in our everyday lives. We read adverts, listen to news broadcasts that have been written by someone, receive emails, read lecture notes, notices, marketing material, magazines, newspapers and books.

These text can be characterised by:

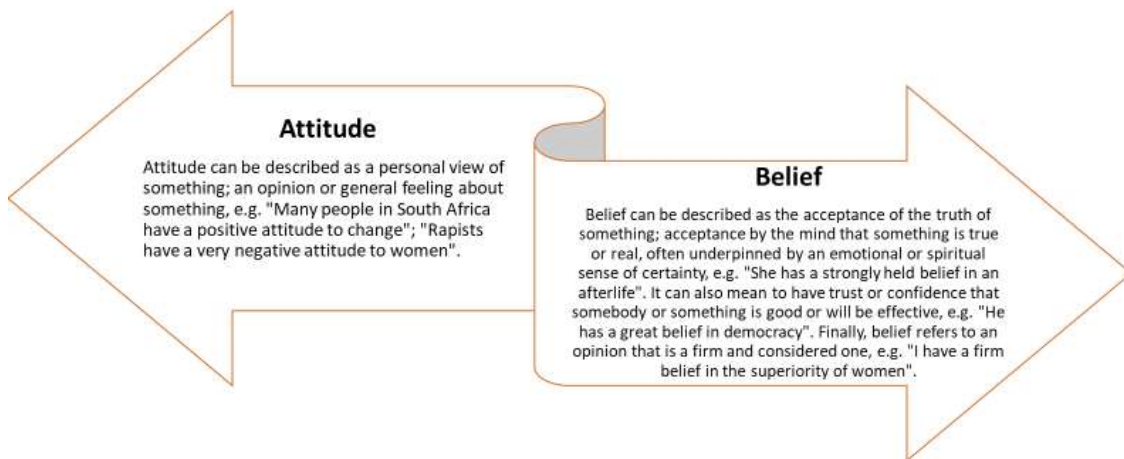
 <p>Reliability: Reliability means the extent to which text is to be trusted to be accurate, correct or to provide a correct result, e.g. "I don't think the report that aliens have landed is very reliable." One way to check reliability is to look at the source. If we heard on the 7 o'clock news that aliens had landed we might be seriously concerned. We assume that news reports are fairly reliable. We also assume that newspaper reports are fairly reliable, so again if we read in the "Cape Times" that aliens had landed we would take it fairly seriously. If however we read this in a sensationalist magazine we should have serious doubts about it.</p>	 <p>Sensationalism: Sensationalism refers to the use of shocking material; the practice of emphasising the most horrifying, shocking, and emotive aspects of anything under discussion or investigation, especially by the media. Some magazines specialise in sensationalism. They publish stories, which are difficult to back up or prove, and they appeal to that part of our nature that enjoys being shocked. Such magazines may be fun to read but their claims should not be taken too seriously. We need objective and reliable evidence to back up wild claims.</p>	 <p>Objectivity: Objective refers to statements which are free of bias or prejudice caused by personal feelings; based on facts rather than thoughts or opinions, e.g., it is an objective fact that drug use among teenagers is increasing in Cape Town.</p>	 <p>Bias: Bias can be defined as a preference; it is an unfair preference for or dislike of something, e.g. "The teacher is biased against black learners - she always picks on those learners unfairly"; "The report on the gay club was biased against homosexuals - it gave a very negative impression of them. Sometimes an implicit or implied message is transmitted through a biased source.</p>
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Individual Activity 26

Author's Attitude

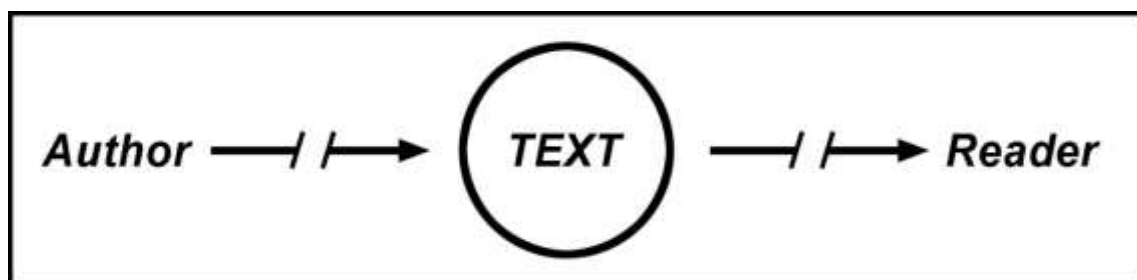
What an author believes and what his/her attitude to something is will have an influence on the message he/she is putting across. The attitudes and beliefs of the author may be directly stated or put across in an indirect, implied, more subtle manner. An example to illustrate this is:- when someone states: "I do not like women." they are directly stating their attitude; if they were to say: "Women are a very difficult bunch." they would be indirectly expressing a negative attitude to women; the message would be implied.





Individual Activity 27

Author's Intention



Intentions

Intentions can be described as the aim or objective of something; something that somebody plans to do or achieve, e.g. “The students learnt about agricultural practices so that they would become good farmers”. Authors can have a huge variety of aims or intentions, e.g., they may wish to entertain, to educate, to convince readers of a political point of view, to persuade people to believe in a cause, to convince readers to purchase something, to express their own point of view publicly and so on.

We can usually work out what the author's intention in writing something was but sometimes their point of view may be hidden or implicit because the stated intention is not the only one. For example: in the Apartheid era, the stated intention of history textbooks was to educate learners on national and international history. However, by conveying history from certain perspective learners were educated to reinforce their position within Apartheid society, rather than to question the injustices of Apartheid.

Implicit

An implicit message is an indirect message, which can be picked up directly from the context. To imply something is to suggest it without stating it directly. If I say "Geewhizz, you are very early for lectures today!" when you are exactly on time, my implicit message to you is that you are generally late. Authors of texts often imply or suggest a message without stating it directly. We need to explore how to recognize this.

Writing Purpose and Technique

In a text that is relatively simple and aimed at a general public, where the author wished to make sure his/her purpose is clearly transmitted, shorter sentences will be used. Shorter sentences are generally easier to follow than very long complicated ones.

Look at these two texts and decide which one would be aimed at an audience consisting of computer experts and which one would be aimed at people who were not yet computer literate.

- First turn on the computer. You do this by pressing the button on the tower. Your computer is then on. Next look at the keyboard. You will see the familiar typewriter's keyboard. There will however be some additions. These additions are called Function keys. You will notice other differences as well. There is a section to the right of the keyboard. You will see numbers and words on these keys. We will learn what each one means.

- Your Internet Service Provider should ensure an excellent connection to the Web at all times otherwise your browsing and searching or scrolling up and down the pages will be to no effect. As you all know, the uniform resource location of your web page will reflect either hypertext mark-up-language or Java script which is closely linked to the former, both in design and function and both of which originate with the beginnings of icon-based word-processing.

CLUE Both the sentence length and the content tell us about the purpose and the audience.

Punctuation

Punctuation is critical to the reader as it helps us know when to pause, when to stop and when people are speaking amongst other things. A poorly punctuated piece of writing is usually very difficult to understand. If an author was composing an advert that had dialogue it would be critical both for his/her audience and purpose that the punctuation was correct. For example, look at the difference in meaning between:- Ms Viljoen said I am too slow when I move, and, Ms Viljoen said: "I am too slow when I move!".

Choice of Words

The choice of words depends a great deal on whom the intended readers are and what the purpose or intention of the author is. If we want to ensure that our communication is understood by any reader we would obviously choose simple, clearly understood words. If we knew we were writing to a person, or people, who were totally familiar with the topic, we could use words they could understand. Technical jargon may not be understood by the general public. This could apply to slang as much as to jargon. Another technique used by authors is to vary the extent to which they use figurative language.

Figurative Language

Figurative language refers to language that is not literal. Literal is the actual meaning of the word, so figurative means using language that contains a non-literal sense of a word or words, "she will bite your head off if you tell her that" literally means she will use her teeth to remove your head; the sense in which it is used is figurative here, meaning "she will get very angry if you tell her that".

Humour

Humour is a way of relaxing and entertaining the reader. It is used when the purpose of the author is to entertain or amuse the reader. Humour would be out of place in a very formal

text. Advertisers often make use of humour; certain companies such as 'Vodacom' and 'Kulula dot com' have very humorous advertisements.

Irony

Irony can be defined as a type of humorous device or technique based on using words to suggest the opposite of their literal meaning, e.g. "That is great news!" as a response to hearing your working hours are to be extended.

Sarcasm

Sarcasm is cutting language: remarks that mean the opposite of what they seem to say and are intended to mock or deride, or make fun of something or someone. Sarcasm and irony are effective ways of communicating for friends or in informal settings. It would generally be considered inappropriate to use sarcasm or irony when addressing people formally or people who are senior to you.

Look at these examples of sarcasm:-

- In Hollywood a marriage is a success if it outlasts milk. -- Rita Rudner
- I love being married. It's so great to find that one special person you want to annoy for the rest of your life. -- Rita Rudner
- Politics is perhaps the only profession for which no preparation is thought necessary. -- Robert Louis Stevenson
- Politics is the skilled use of blunt objects. -- Lester Pearson
- Every time I look at you I get a fierce desire to be lonesome. -- Oscar Levant
- Zimbabwe kicked out its best source of income, employment and food. – Richard Perks (letter to Farmer's Weekly May 2005)

Satire

Satire can be described as the use of wit: especially irony, sarcasm, and ridicule, to attack the evils and stupidity of humankind, e.g., the play in which politicians were represented as greedy children was a satire - it was making fun of politicians. In South Africa Pieter-Dirk Uys is the best-known satirist. His creations of Evita Bezuidenhout and others were done in order to poke fun at the Nationalist government. During the Apartheid era, his plays were sometimes prevented from being performed. Some politicians however found his satires amusing.

Visual Techniques Used by Authors

There are various camera angles that can be used for different purposes.

- A **Low angle** is used to dramatize and make the product or subject seem larger than life, e.g., a low angle shot of specific flowers to illustrate a Nature text; a low angle shot of faces to illustrate a text entitled "Beauty is in the eye of the beholder".
- A **Natural angle** is used to get the audience to relate to a product in its everyday setting e.g., a series of pictures of houses could be shot using a natural angle to accompany a text on architectural styles.
- You can also use an **Unnatural angle** where the camera is tilted during filming or shooting. This can be used to give the impression that something is looming or leaning over, e.g., a shot of tall skyscrapers in New York taken at an unnatural angle to illustrate a text on how buildings are blocking out natural light.

Cinematographic Technique (Video, TV and Movies)

A Cinematographic technique is a term that includes camera angle, lighting, background, use of music, use of accompanying text and so on. Thrillers for example are often shot using dark lighting and in dark colours to add to the suspense, e.g., the film "Seven" is very dark and grainy. (Can you think of another example?) A movie that is set outdoors such as Lord of the Rings makes great use of the natural beauty of the countryside. (Can you think of another example?) A feel-good movie like "Wondrous Oblivion" is shot using natural camera angles and with bright naturalistic lighting. (Can you think of another example?)

Adverts aimed at young people for example are often very brightly coloured and are fast moving and make use of colloquialisms and slang. The implied message here is that young people are always on the move, busy and active and need products to suit their lifestyle. Think of cell phone adverts, or adverts for Fast Food places. Can you think of any other examples of adverts aimed at young people that use a particular type of cinematographic technique?



Individual Activity 28

Write Texts For A Range Of Communicative Contexts



Text and Context

Here we deal with following instructions and requests and at how to use text-type, format and register on the correct level of formality. Different texts have different contexts and require us to respond in different ways. We need to ensure that we respond appropriately.

Request

Let us look at text that consists of a request. Certain texts require us to respond in certain ways - we are asked or requested for example to supply our personal details when we apply for a student loan or bursary. There are times however when in order to respond to a request we would need more information. There are other times when in order to respond to a request we need to sort out the order of things being requested so as to be able to respond appropriately.

If you were asked to help a developing farmer choose the most suitable crops for her area you would first need to establish a lot more information about where her farm was, how much land she had, what type of soil she had and other relevant points. Requests are often, but not always, phrased as questions.

Instruction

Instructions can be defined in two ways:

- firstly as orders, e.g. "I was just following instructions when I forwarded that email";
"acting on instructions we received we went on to the next Lesson".

- Or they can refer to a list of things to do; printed information about how to do, make, assemble, use, or operate something, e.g., "the instructions are printed on the back of the packet".

The difference between an instruction and request lies in the responder's choice. If you have no choice it is an instruction (even if the instructor asks nicely). If you do have a choice to do or not to do, then it is a request.

EXAMPLES:

Look at the following examples and decide whether they are instructions or requests.

1. Finish the work today or you will be fired. - instruction
2. Please go to Worcester then to Robertson. - instruction
3. You must fill in this form. - instruction
4. Will you help the grape grower choose his cultivars? - request
5. You need to first check the plug and the switch carefully, then use the power point. -instruction
6. Please fill in Section A followed by B, then C, then D - instruction
7. Please could I have more information? - request

Text-Type

Text-type refers to the font you choose to use when using the word processor.

Here are some examples of text-type or font:

Hi! My name is Avela, and I live in Gugs.

Please reply to this letter by return of post.

Old texts looked like this.

This is a more formal type of font.

This is quite a complicated font and is not so easy to read.

Text Format

Format refers to the structure of something; the way in which something is presented, organized, or arranged; specifically in this context it refers to the way a written communication is presented or structured.

Register

Register in this context means language of a type that is used in particular social situations or when communicating with a particular set of people, e.g., when speaking to her boss Meranisa used a formal register; when you are using slang you are using an informal register. We use different registers depending on whom we are communicating with and what the purpose of our communication is.

- Friendly emails, notes or letters would tend to be written using an informal register, if our purpose was to communicate with someone we know well.
- Office memos, business letters, faxes (for official business) and business emails would be written using a formal register.

We all have the ability to use either register and we swap between the two depending on who our audience is. This is referred to as code-switching. Watch how your style changes depending on who you are writing to. A lecturer or a business associate would be very surprised to receive a letter that started with "Howzit?" and ended with "Lots of love"!

Shaping A Point Of View



Point of view is shaped by choice of words, language usage, accompanying visuals, or pictures, tone and style.

Bias

Bias can shape or support a particular point of view.. We have mentioned bias in an earlier section. Remember that we said bias was an unfair preference for or dislike of something. Bias is unfair, because it is not representative of how we should treat people. In South Africa we are lucky enough to have an extremely good constitution through which we are all protected. Our constitution does not permit us to discriminate against, or treat unfairly, people on the basis of cultural or ethnic identity, gender, religion, age or sexual preference. This guarantees us all our basic human rights.

Bias is encountered frequently. We have to guard against it influencing us to make unfair judgements about people. Most of the research done in South Africa shows that we have more in common with each other than we think. Newspaper surveys show that people from all race groups, income groups and age groups, of both sexes or genders have similar fears about life in South Africa. We all worry about crime, unemployment, the cost of living and corruption. Of course, there will also be differences, but to be biased against people for any of the reasons shown in the example above is to cut yourself off from experiencing the rich diversity this country has to offer us all. If an author has a particular point of view which is biased, what he/she writes will reflect this bias.

The choice of words used by the author may influence us. The difference between facts and opinions have previously been dealt with. **Facts** are statements we can test whereas **opinions** are what someone thinks. If the author has a biased opinion about some group they will express their point of view by using biased language. Always be alert to statements about groups of people that contain the word "All" in them. It is seldom possible to make statements like "All black people are bad-tempered" or "All fat people are lazy" or "All young people use drugs" or "All Zulu's are brave" without being guilty of bias. Groups of people vary enormously in their behaviour and generalised statements are seldom accurate. We must also guard against misrepresenting facts and showing bias in that way - because some members of a particular group behave in a certain way that does not mean that all members follow this behaviour. It is a misrepresentation to say, for example, that all British soccer fans are thugs.



Individual Activity 29

Humour

Humour can influence the reader in indirect ways. If we constantly read or hear jokes about how dumb blondes are or how stupid a particular race is, we can start to be influenced by this. There are many examples of humour that are based on negative messages about a particular group. Some examples are jokes about fat people, disabled people, old people, and so on. We have already mentioned earlier in this Module how humour can be used in adverts to influence a reader. While humour can add a great deal to our enjoyment of things and can successfully be used to influence readers in positive ways, we should be aware that humour that is based on the supposed weakness or vulnerability of a particular group is usually being used to attempt to influence us in a negative way about that group.

Figurative Expressions

Figurative expressions make written language more interesting. To say someone was a tiger in a fight or as strong as an ox, is to enliven the written word. Because figurative expressions grab our attention, they can be used as devices or strategies by authors to convince us of a point of view. Consider the earlier example, above. If the author had written a passage describing smokers in a highly figurative way, he/she could make their point even more strongly.

An example might be "Huffing and puffing, the smokers clutch desperately on to their cancer-sticks, dragging at them for all they are worth. What a pitiful bunch! They pollute the perfect atmosphere with foul smelling yellow clouds of poison!" Would the reader of this be in any doubt as to what point of view was being put across? If you had no particular objection to smokers, would reading a passage like that influence you at all? In what way?

Repetition

Repetition is another example of a technique an author can use to influence the reader and build support for a point of view. By stating the same facts or opinions over and over again in different ways, the author can push his/her point of view.

Hyperbole

Hyperbole can be defined as exaggeration; it is deliberate and obvious exaggeration used for effect, for example, "I could eat a million of these"; "There are miles of people waiting in the queue". Hyperbole is an effective way for a writer to make his/her point of view and attempt to influence the reader.

Stereotype

Stereotypes can be defined as an oversimplified idea; an oversimplified standardised image or idea held by one person or group of another, e.g. the stereotype of a blonde is that she is dumb; the stereotype of an Italian is that he/she is very emotional. Stereotypes are not accurate, as no single group of people ever have exactly the same characteristics as each other. There are plenty of highly intelligent blondes and plenty of cold, rational Italians. It is wrong to judge someone according to a stereotype - it will simply be inaccurate, and unfair. Authors could also use stereotypes to support their points of view. We know that to stereotype people is wrong yet it still happens, and we need to be aware of it. Stereotypes are closely linked to generalisations.

Generalisation

A generalisation can be described as a sweeping statement; a statement presented as a general truth but based on limited or incomplete evidence, e.g. "All Americans are greedy capitalists"; "All Homosexual men like flowers".

We are more easily swayed by stereotypes and generalisations when an author is writing about something we have very limited knowledge about.

Imagine that someone had encountered Martians. If she/he wrote something in which Martians were described as amazingly ugly, bad-tempered creatures, who were lazy and greedy, we would have almost no way of checking up on this.

If however an author wrote this about a group of people living in the jungles of the Amazon, even if we had not been there, we could check whether other authors had the same view. We also could check up on the source of the report - is it a reliable source? Is this a fact or an opinion?

Many times generalisations and stereotypes are used together. Authors use them to build up support for a point of view.

Extremely negative forms of stereotypes, bias, and generalisation are actually forms of hate speech (the term is applied to the written and the spoken word) are not allowed by law.


Pictures and Captions

An author can use pictures and captions (headings to pictures) to attempt to influence readers and support a particular point of view. Carefully chosen pictures can influence us more even than the written word. If we are reading a text on starving children in Rwanda, and there is no visual material, we may not be too distressed.

This would especially be true if the text was written in a factual, unemotional manner. If, however photographs of children on the brink of death from starvation accompanied this text, we would probably feel upset and disturbed by what we were reading.

The photos would make even more of an impact if they were headed with a caption such as: "Mwangi's last minutes." Some time ago (2003) the Argus published a picture of a dead child, killed in the Iraqi war, on the front page. Many readers were upset and said that such an image was too graphic and detailed a representation of the horrors of war to be shown. Journalists might argue that this is the truth of what war is.

What do you think? Do you think really detailed pictures of horrific scenes should be published? You decide. Advertisements of course use accompanying visuals to attempt to influence readers to buy products.



Individual Activity 30

Typography

Typography refers to the layout of a page or pages. The visual impression created by a piece of text is important and can influence the reader. If a page is well and neatly laid out we are more likely to take its contents seriously. Magazines that appeal to a broad-based readership, popular magazines in other words, tend to use typography that is quite eye-catching. There will be lots of big headlines and accompanying pictures. Magazines that appeal to a more serious readership such as specialist current affairs magazines will use a much less dramatic layout.

Go to a bookstore and look at the magazines that are for sale. In particular, look at a "You" magazine and an "Economist" magazine. Take note of the differences between them. Can you

see how their typography differs? What other differences do you notice? Can authors influence readers by their use of typography?

A fast zippy layout that is eye catching and accompanied by many pictures is likely to signal to readers that they are about to be entertained. A more serious appearing, straight forward layout with not much variation in font and few accompanying visuals, would signal to a reader that what they were reading was fairly seriously written.

Grammar

Grammar or correct language usage is another technique of which authors need to be aware if they are trying to build support for an argument. A well-written piece of text is likely to have a greater impact on us than something which is full of errors. Grammar and typography together form the style of the written word. Style refers both to appearance and to how a text read. We talk about authors as writing in a particular style.

Writing Aimed At A Specific Audience And Purpose

Introduction

In this section, we will look carefully at **why** we need to write something, **what** that piece of writing will say and **how** it will say it in the best manner. In the process, we will work with examples of the basic types of written text, and improve our skills of gathering and organizing information to produce an effective piece of writing.

Purpose, Audience and Context

Many people feel intimidated by having to produce a piece of writing, and you may be one of them. We may feel quite comfortable speaking to people, but when we have to write, it feels quite different. It's just that we are more used to **speaking** than to **writing**. Yet, there are occasions in our lives when we have to produce something in written format. We may even want to write.

So, the first thing to keep in mind is that writing is essentially speech that has been written down. And just as when you speak, there is a **context** - you are saying something to someone - so when you write, you are writing to a reader, or an **audience** and you are writing for a **purpose**. The advantage is writing is a process that gives you the chance to 'get it right' – you can think about why you are writing, what you are going to write and how best to say it. You can make thoughtful choices, try things out, correct or change what you have written and

finally produce the best piece of writing that you can. This Section will start you on the process of becoming an effective writer.

We will use the word text to refer to any piece of writing that is presented for consideration. This includes writing of any length (from a single letter or word to a book).

More generally, the term text may be used to refer to any product that can be read, decoded (understanding of any other kind of text e.g., picture) or deconstructed (analysed to understand how it works). Thus, although we will be working mainly with written texts, other examples of 'text' are: oral (spoken) text, a movie, a painting, a chocolate wrapper.

Selection of Appropriate Text

Context	Audience	Purpose
<ul style="list-style-type: none"> Context refers to the circumstances, or environment, in which a text is produced and/or read. This can refer to the time of writing (anything from time of day to historical period), the place (from physical space to geographical location), as well as to the social and/or cultural environment in which the text operates. The context can impact significantly on the way a text is produced or read, as we shall see. 	<ul style="list-style-type: none"> Audience refers to the reader or 'consumer' of the text. The term usually refers to an intended audience, i.e., the target reader for whom the writer produces the text. This may be a specific person or a wider audience, as when something is written for publication. 	<ul style="list-style-type: none"> Purpose is what motivates the production of the text. Firstly, we will look at the context of each piece. A careful reading of the text can tell us quite a lot about the context in which it was produced.

Consider the two write-ups below.

Comparison of Writing

Mail A	Letter B
<p>Hi Mom</p> <p>I am writing to tell you of my latest disaster. I am in bed with one hell of a sore ankle! Poor me - wish you were her to spoil me with nice food and a mug of coffee. I went and twisted the stupid thing while I was out collecting plant samples with my mates Ronnie and George and now I am in big trouble. I had two mega projects due today and with all the drama I have been unable to complete them, so I have to write notes to the lecturers and tell them the whole sad story.</p> <p>Anyway, I guess it could be worse - remember when I broke my arm when I was just a silly little kid?</p> <p>Love Roberto</p> <p>PS If you could send me some koeksisters to help heal the ankle that would be great!!</p>	<p>Harfield House Res Leliefontein Street Worcester 25 April 2005</p> <p>Dear Ms Adams,</p> <p>Please excuse me from lectures for the next two days. Please could I also have a two-day extension on my project on Fynbos of the Overberg Region? I injured my ankle whilst doing yesterday's plant practical and have been unable to get to the resource centre.</p> <p>I do have a doctor's certificate which I will give you when I return to lectures on the 2nd May.</p> <p>Yours sincerely, Roberto Jones</p>

Both are written by the same person, in response to the same set of events, but what is different about these two pieces of writing?

Your writing needs to suit your audience.

- Hence they are differences in **style**: The mail is informal, chatty and colloquial (using every-day language). The letter on the other hand is formal, serious and distant.
- There are differences in **form**: the email has no address, and is not as carefully punctuated. The letter has an address, is well punctuated and ends with a formal salutation (greeting).

Now let us account for why these pieces of writing are so different.

Consider the **context**, **audience** and **purpose** of each text, and think about how these factors affect what is written and how it is expressed.

- The context for the example of the email is a son writing to his mother. He is informing her that he had an accident. He is also writing from the point of view of a son missing the care he would get at home. The letter, however, is written in the context of a student asking for exemption from lectures and due dates.

Remember, when you produce a piece of writing, your reader may be picking up a range of cues regarding the context in which you are writing that piece. You should therefore, be aware of the implications (intentional or otherwise) of what you write.

- What about the audience and purpose? How do they affect what is written and how it is written?

The **audience** for the first piece – the email – is his mother, clearly someone he knows intimately. So what he writes about is detail of his accident and how he is feeling, as well as his nostalgia for home. By analysing his writing, we can detect an informality that reminds us of spoken language. Roberto's email resembles a chat with his mum.

What is his **purpose**? His purpose is to inform his mother of what has happened to him. Partly it is also to ask for sympathy and to make a request for a gift.

The **audience** of the second text is a lecturer. This person is able to excuse Roberto from lectures and give him an extension of his due date for one of his projects. Thus, we can see how the writer chooses a form of writing that is suited to the context, audience and purpose of the text.

Selection of Appropriate Language

Using appropriate language is a critical factor in writing. You have done work on issues such as sexism, racism and ageism. You are aware that using language that is insensitive to these and other socio-cultural issues is inappropriate.

Similarly, using a particular form of writing or type of text is critical to the message being conveyed. Choosing an inappropriate form for a piece of writing may have an effect that is entirely unintended.

What happens if an inappropriate text-type, style and register are used? We can gauge the effects of this if we try writing each of Roberto's texts in a different form. Let us see how each example might work (or not work!).

MAIL A in business context

First, consider the piece written by Roberto to his mother. It happens that his mother used to be the owner of a small business.

Consider how appropriate it would be for Roberto to write her a business letter in the form of an email:

The Director
Ajax Supplies
P.O. Box 455
Cape Town
8000

Dear Ms Jones

INFORMATION REGARDING TEMPORARY DISABILITY

You are aware that I am currently studying plant production at Boland College. This necessitates undertaking practical field trips with fellow students. During one such field trip I unfortunately met with a small accident which resulted in some minor damage to my ankle. This in turn necessitates my being away from lectures and failing to hand in two projects.

This accident has also caused me to recall how in the past you displayed a sympathetic manner towards me under similar circumstances. Ideally I would appreciate such care at the present juncture.

I have also recently recalled a prior occasion on which I broke my arm some years ago.

Finally, I wish to place an order for some koeksisters to be delivered as soon as possible.

Yours sincerely

(Mr) R. Jones

As a business letter, it has a perfectly correct form. But is it **appropriate** in this context?

Roberto's email to his mother is inappropriate in the following ways:-

- The **form** of greeting is formal (although as an email it does not put in details of address). The **content** leaves out details that would be relevant to a mother.
- The **style**: uses an over-formal register, vocabulary (present juncture, necessitates), syntax (You are aware..., finally I wish, this in turn...)
- Clearly, this letter is totally inappropriate to the context, the audience (his mother as mother, not his mother as businesswoman) and the purpose (to share his feelings and make a very personal request, not to make a business proposal).

LETTER B in informal context

But let us consider Roberto's letter to the lecturer.

Let us suppose that the context were not as simple as we first assumed. What would happen if the relationship between Roberto and the lecturer had another side to it? Let us suppose that Roberto and the lecturer are members of the same church and know each other quite well as they have served on the church youth group committee together for two years. How could that affect the way Roberto writes his letter?

Imagine that Roberto had sent the following letter to his lecturer, which he knows well from church:

Hi Annie

Listen I hurt my ankle yesterday and have to stay in bed for two days. This means I will miss class and also won't be able to do my projects - sorry! See you at the meeting on Sunday. I don't know what we are going to do about that situation – you know what I am talking about!

Cheers

Roberto

Do you think this letter is appropriate?

Before you answer, imagine that you are the lecturer and that in your department all requests for extensions get sorted by the administrative assistant to send to the academic committee. They are therefore read by three different staff members.

Here are some in terms of appropriateness:

- Format: Too casual, no address given
- Style: Too informal, personal and intimate
- Register: Inappropriate - too familiar and too indiscreet

In the above example, Roberto may know the lecturer personally, but he is still writing to her as the lecturer. It would therefore be inappropriate for him, in this situation, to make any reference to their church connection, or to adjust his approach to writing an official letter.

Remember that, in official communication, personal relationships are not relevant and reference to them would be insensitive to the reader. Making the wrong choices could undermine the integrity of both the writer and the reader.

In the examples we have just worked through, we looked at how the same events can be written about in two very different ways. In each case a different type of text was used. The choice for using the particular type of text depended on the audience being written for, and the purpose of the writing. We made sure that the language being used was appropriate to the sensitivities of the recipient. We then considered the consequences of choosing the wrong form and inappropriate language.

Selection of Appropriate Genre

Let us now give some attention to types of text. We have so far looked at a friendly email, a formal letter, a friendly letter and a business letter. We will now expand our scope to include not only letters, but many more types of text, or genres, which can be used for writing.

Genre:


Genre is a form or category of written text.

Narrative:	Narrative tells a story which consists of a series of linked events. The narrative may be fiction (imaginary e.g., novel) or non-fiction (reality e.g., history), or it may mix the two (e.g. mixing fictional characters with real people). The events of the story are arranged in an order or sequence – the plot. The plot may follow a chronological sequence (the order in which things happened), or it may re-organise events to create a more complex plot (e.g., going back in time). A narrative may be any length (a 3-line joke or a whole novel) and is conventionally told in past tense.
Discursive:	Discursive presents a discussion of a controversial topic by presenting both sides of an argument. The discussion maintains a balance between the two sides of the argument, and uses evidence to support any point made. A conclusion is reached after weighing up the two points of view that have been presented. It is usually in the present tense, although past events may be presented in the past tense.
Reflective:	Reflective presents the writer's thoughts and reflections on looking back on a process, experience, person, memory, event etc. Although it may include opinions, it goes further than that.
Argumentative:	Argumentative presents an argument for or against a topic. The writer has a definite point of view which is based on a clear premise or basis for the argument. The discussion is consistently based on that viewpoint. In support of the viewpoint, the writer may present evidence derived from experience, research etc.
Descriptive:	Descriptive presents a description of a subject such as an object, person, scene, experience etc. Usually in the present tense and, depending on the subject and context, may use figurative language (comparisons such as simile or metaphor).
Expository:	Expository is an explanation of how something works. The subject may be, for example, a system, process or object but the purpose of the writing is to make its workings clearer to the reader.
Transactional:	Transactional refers to writing that has a functional nature, some examples of which are described in more detail below. Transactional writing may be done for personal reasons (e.g., diary, journal, friendly letter) or for business reasons (business letter, advertisement etc.)

Different formats will apply for different purposes.

- **Advertisements** can be in the form of fliers, brochures, magazine adverts, television adverts etc.
- **Electronic texts** e.g., email, SMSs
- **Multi-media presentations** e.g., power-point, video
- **Business letters** have a specific format and conventions.

Refer to Annexure 13: See the format of a business letter



Individual Activity 3 I

Structuring Writing

We are now going to turn briefly to structuring writing in order to convey a message clearly.

Consider the following. A medical aid organisation has posted a new membership card to each member, together with a sticky plastic covering.

The following instructions for covering the card came in the letter:

Please use the attached plastic sticker to cover the card. Cut out the card along the dotted line. First you should make sure you sign it before you cut it and cover it with the plastic.

This card is proof of your membership. If your signature is not sealed under the plastic cover, the card is not valid.

Are these instructions clear? If you follow them, will you end up with what you need?

Notice that the first instruction tells you to cover the card with the plastic sticker. Then it tells you that you should first cut it. Then it instructs you to sign it. Near the end it explains what the card is for. Lastly it warns you of the importance of signing the card before covering it with plastic – but after you may already have invalidated it.

Of course, it is advisable to read instructions through completely before starting a task, but even so, the instructions should be presented in the exact order in which the steps of the task are to be done. If you followed these instructions as they were given, you would have stuck the plastic on before you had signed it – and the card would be invalid.

We have considered how important it is for a paragraph to be well structured in order to provide a clear message to the reader. Now, we must look at how we can work at producing a longer piece of writing so that it is well structured, in order for its message to be clear to the reader.

When producing a piece of writing, you need to plan carefully by using similar techniques: brainstorming, highlighting, mind-mapping.

We will revise these techniques, by planning a letter to a community newsletter. Your local community newsletter has been running a column on the HIV-AIDS epidemic. They recently ran an informative article on the ABC programme (Abstain, Be faithful, Condomise).

While reading the article, you felt strongly that although the programme has value, it is an inadequate response to the epidemic. You decide that you want to write a letter to air your point of view.

How do you set about planning your letter?

We will go through 3 basic steps in planning the letter:

- brainstorming - to mobilise ideas
- highlighting – to sort and sift those ideas
- mind-mapping – to organise and begin shaping the letter.

How to Structure your Writing

Brainstorming	Highlight Main Ideas	Mind-mapping
Brainstorming is a method design teams use to generate ideas to solve clearly defined design problems. In controlled conditions and a free-thinking environment, teams approach a problem by such means as "How Might We" questions. They produce a vast array of ideas and draw links between them to find potential solutions.	To select from an array of possible ideas/ content the core content that summarises the essence of your intention.	A mind map is a diagram used to visually organize information. A mind map is hierarchical and shows relationships among pieces of the whole. It is often created around a single concept, drawn as an image in the center of a blank page, to which associated representations of ideas such as images, words and parts of words are added. Major ideas are connected directly to the central concept, and other ideas branch out from those major ideas.

Step 1: Brainstorm

Jot down all the thoughts you have on the subject. In this process, remember:

- Go back to the original article to 'spark' your memory and ideas.
- Then set it aside and let your own ideas come.
- Be brief (one-word notes are best, use abbreviations if you want to).
- Write ideas as they come.
- Do not 'censor' yourself – anything goes (you can eliminate later).
- Once you have brainstormed a range of ideas, you can start looking at them more critically.

Step 2: Highlight MAIN IDEAS and Cluster Others

- From the random points that you have jotted down, select the ones that you think are **key points**.
- Now ask yourself, what key concepts are these points representing? Divide all the points into these concept clusters.
- Then highlight a key point that you could use in your introduction. It should relate to the topic and your purpose/ intention.
- Highlight any point that you could use in your conclusion e.g., Simplistic
- If you think a point is not relevant to any of the main ideas, discard it.

Step 3: Mind-Map

This is the stage when we start to plan the shape of our argument. The points produced by the brainstorm are the materials with which we work, but how we put these points together is as important as the ideas themselves. We can work in these stages:

- At the centre of the mind-map is our **topic**. Why? Because everything we write must link with that topic – we must “stick to the point”.
- The highlighted key points as our main ideas are each set out linked to our topic. It is important to put the main ideas in a logical
- How do we select Main Ideas from our list? A Main Idea must be one that can include other ideas. Some points are broader categories; others are examples that fall into those categories. E.g., holistic solutions is a category, which includes examples such as education, testing, ARVs, counselling etc.
- The other points from the brainstorm are then examined to see what they can add to the Main Ideas. If relevant, they are clustered (grouped) under the relevant main point. Any point that is not relevant to any main idea is discarded. In this way, you will sift through your list of ideas, classifying your material as you do so. Once the plan has been drawn up as a mind-map, it can be written out in full. Each Main Idea will form a paragraph and the points will be written out in full sentences.

Example

Back to the example of the letter to the community newsletter.

This is how it might pan out.

How to Structure your Writing

Brainstorming	Highlight Main Ideas	Mind-mapping																																																		
<ul style="list-style-type: none"> • ABC – meaning? • Individualistic • Simplistic • Reality • Infection rates - Figures • Friend • Testing • Rape • ARVs (Anti-retroviral medicines) • Scale of epidemic • Holistic Solutions? • Workplace • Know status • Counselling • Disclosure • Prejudice • Rejection • Fear • Normal disease • Youth • Ignorance • Education • Barriers • Babies • Mindset 	<p>Your brainstorm list may now look like this:</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">• ABC – meaning?</td> <td style="border: none;">Use for INTRO</td> </tr> <tr> <td style="border: none;">• Individualistic</td> <td style="border: none;">INTRO</td> </tr> <tr> <td style="border: none;">• Simplistic</td> <td style="border: none;">CONCLUSION</td> </tr> <tr> <td style="border: none;">• Reality</td> <td style="border: none;">* Main idea</td> </tr> <tr> <td style="border: none;">• Infection rates – Figures</td> <td style="border: none;">REALITY</td> </tr> <tr> <td style="border: none;">• Testing</td> <td style="border: none;">HSOLUTIONS</td> </tr> <tr> <td style="border: none;">• Rape</td> <td style="border: none;">REALITY</td> </tr> <tr> <td style="border: none;">• ARVs (Anti-retroviral medicines)</td> <td style="border: none;">HSOLUTIONS</td> </tr> <tr> <td style="border: none;">• Scale of epidemic</td> <td style="border: none;">REALITY</td> </tr> <tr> <td style="border: none;">• Holistic Solutions</td> <td style="border: none;">* Main idea</td> </tr> <tr> <td style="border: none;">• Orphans</td> <td style="border: none;">HSOLUTIONS</td> </tr> <tr> <td style="border: none;">• Workplace</td> <td style="border: none;">HSOLUTIONS</td> </tr> <tr> <td style="border: none;">• Know status</td> <td style="border: none;">HSOLUTIONS</td> </tr> <tr> <td style="border: none;">• Counselling</td> <td style="border: none;">SOLUTIONS</td> </tr> <tr> <td style="border: none;">• Disclosure</td> <td style="border: none;">BARRIERS</td> </tr> <tr> <td style="border: none;">• Prejudice</td> <td style="border: none;">BARRIERS</td> </tr> <tr> <td style="border: none;">• Rejection</td> <td style="border: none;">BARRIERS</td> </tr> <tr> <td style="border: none;">• Fear</td> <td style="border: none;">BARRIERS</td> </tr> <tr> <td style="border: none;">• Normal disease</td> <td style="border: none;">CONCLUSION</td> </tr> <tr> <td style="border: none;">• Youth</td> <td style="border: none;">REALITY</td> </tr> <tr> <td style="border: none;">• Ignorance</td> <td style="border: none;">BARRIERS</td> </tr> <tr> <td style="border: none;">• Education</td> <td style="border: none;">HSOLUTIONS</td> </tr> <tr> <td style="border: none;">• Orphans</td> <td style="border: none;">REALITY</td> </tr> <tr> <td style="border: none;">• Barriers</td> <td style="border: none;">* Main idea</td> </tr> <tr> <td style="border: none;">• Mindset</td> <td style="border: none;">CONCLUSION</td> </tr> </table>	• ABC – meaning?	Use for INTRO	• Individualistic	INTRO	• Simplistic	CONCLUSION	• Reality	* Main idea	• Infection rates – Figures	REALITY	• Testing	HSOLUTIONS	• Rape	REALITY	• ARVs (Anti-retroviral medicines)	HSOLUTIONS	• Scale of epidemic	REALITY	• Holistic Solutions	* Main idea	• Orphans	HSOLUTIONS	• Workplace	HSOLUTIONS	• Know status	HSOLUTIONS	• Counselling	SOLUTIONS	• Disclosure	BARRIERS	• Prejudice	BARRIERS	• Rejection	BARRIERS	• Fear	BARRIERS	• Normal disease	CONCLUSION	• Youth	REALITY	• Ignorance	BARRIERS	• Education	HSOLUTIONS	• Orphans	REALITY	• Barriers	* Main idea	• Mindset	CONCLUSION	
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• Orphans	REALITY																																																			
• Barriers	* Main idea																																																			
• Mindset	CONCLUSION																																																			

From the Introduction in our mind-map above, we might develop the following paragraph:

Introduction- ABC

Previous article Meaning of ABC Individualistic

Your newspaper recently ran an article on the ABC Programme as a response to the AIDS epidemic. The programme encourages people to change their sexual practice by firstly A - abstaining, secondly B - being faithful to one partner and thirdly C - condomising with every sexual encounter. While I agree with encouraging people to be responsible, this seems a highly individualistic way to deal with it.

Now, take the Main Idea of Reality from the mind-map and write it out in full sentences. Your paragraph will not be the same as this, but should include all the points listed in the mind-map, and should be logical and clear.

"The reality is much more complicated. We have a huge epidemic with people being infected at an alarming rate. The highest rate of infection is among youth, and the

message of ABC has failed miserably there. Sadly, too, there are many cases of rape in our society; increasingly it seems on very young children, even babies. It is clear that infection does not always take place where the ABC choices are likely to be made."



Individual Activity 32



Individual Activity 33

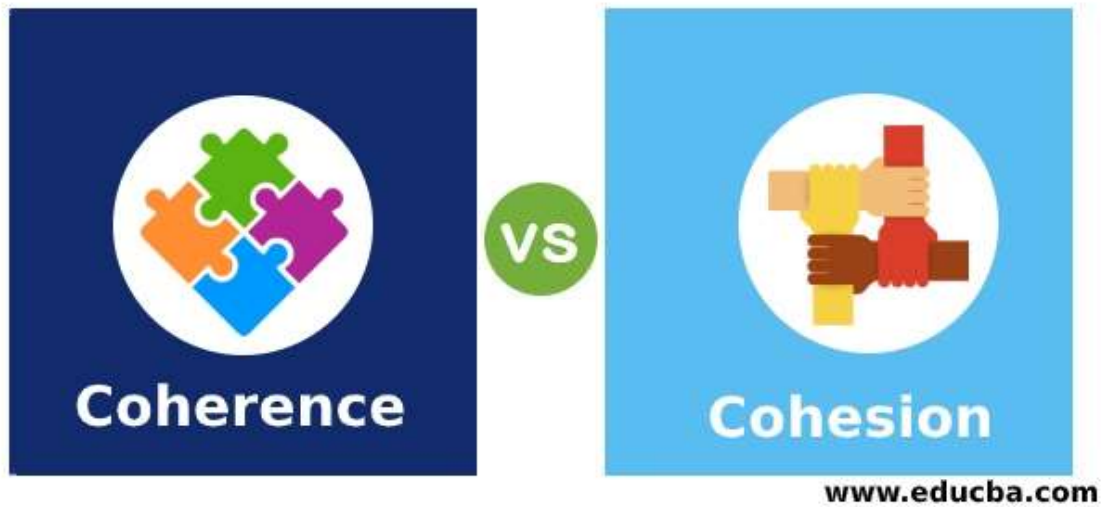
Language Structures And Features

Introduction

In this section we will look at how to use language structures and features in ways that help us produce coherent and cohesive texts. We will look at various writing contexts as we do this. We will focus on sentence lengths, types and complexities. We will then move on to look at the use of paragraphs. Finally, we will look at the overall structure of a piece of writing, paying particular attention to the conclusion of a text. In this Section there will be comparatively little theory - you will however be asked to do a fair amount of writing on your own.

Coherent Writing

We know that texts are written in a variety of styles or genres. You have looked at how the purpose, context and audience determine the style of writing chosen. We will now look at some features and structures of language in more detail. Before we do this however, we need to be sure that we understand what it means to produce coherent and cohesive texts.



Coherence refers to the quality of being logically consistent; writing to ensure that all the separate parts fit together to form a harmonious and credible whole; e.g. "Even though the arguments were complicated, her written report had a great deal of coherence - it all fitted together very well."

Cohesiveness is similar in meaning - it refers to the quality of sticking, holding, or working together to form a united whole; "The very complex data on HIV/AIDS was presented in such a way that it had a great deal of cohesiveness."

How do you ensure that your writing never lacks coherence? Primarily this relates to how you express your ideas and the links you make between different ideas. Let us look at how you can use a range of sentence types to ensure coherence. Sentences are the basic building blocks of a written text. Sentences, like all aspects of language, have certain features and structures.

What exactly do we mean when we talk about language features and structures? A **feature** is something which distinguishes one thing from another. It can also refer to the appearance of something, e.g. "A feature of her writing is her use of unusually long sentences."

Structure as used here, refers to the way in which the different parts of something link or work together, e.g. "He uses very complicated sentence structures; her sentences are very long but are well structured."

Sentences – Lengths, Types and Complexities

As writers, there is a range of ways that we can structure our sentences. Let us look at short simple sentences.

Technically, a **simple** sentence is one which contains a single verb (or action word). Generally, a simple sentence is relatively **short**; e.g. "Nelson Mandela is admired worldwide." "He still travels widely."

The term **compound** is used to describe two simple sentences that are joined by using a common joining word such as 'but' or 'and'; e.g., "Nelson Mandela is admired worldwide and he still travels widely." The word **complex**, which as we know means the opposite of simple, is used to describe **longer**, more complicated sentences; e.g. "Nelson Mandela, who is still admired worldwide, manages to find time in his busy schedule, to still travel widely."



Individual Activity 34

Paragraphs

We are now going to move on to looking at the use of paragraphs. You have already done a fair amount of work with paragraphs when you did brainstorming, but we will now look at the conventions of paragraph writing. All of the work on paragraphs is done to ensure that your writing shows evidence of cohesion and coherence.

A paragraph is a section of writing; it is a piece of writing that consists of one or more sentences; begins on a new line, and contains a distinct idea or the words of one speaker; e.g. "The essay on substance abuse contained eight distinct paragraphs." Paragraphs are used in order to obtain logical progression through a text. They can also be used to show cause and effect and contrast.

Read through the following extract from a text on Communication Theory. As you read, be aware of where each new paragraph begins.

Perceptual barriers:

Perception refers to how we understand or see situations and people as a result of our personal desires, views and values. Perceptual barriers refer to situations in which people don't manage to communicate well as a result of these differences. So when we

communicate with one another, we need to keep in mind that perception plays an important part in how the message will be received.

Different people can interpret the same message in different ways. In the work environment, all people do not share the same view and will have different perceptions about how things need to be done. These differences stem from a wide variety of factors, which influence the way we look at and experience life. Some of our perceptions may be sexist, racist or elitist.

For example, the junior assistant might have a very creative idea, which is radically different to what the company has been doing. The manager, who is used to the old way of running the company, might not even pay attention to this idea if the assistant has little experience, is a woman, or has a different cultural background. However, if they share their thoughts and ideas, they might come up with a practical solution, where they combine the idea with the manager's experience to be more effective in their company.

You need to be sensitive, understanding and tolerant when people differ from you. You need to realise that your way of thinking and doing is not necessarily the only way or the best way. You should practise good listening and negotiating skills when dealing with people who have different perceptions.

Can you see how each paragraph contains one single main idea?

- Paragraph 1 defines what is meant by perception;
- Paragraph 2 explains differences in perception;
- Paragraph 3 gives an example of how a barrier to perception might arise;
- Paragraph 4 gives a possible solution to such a barrier; and
- Paragraph 5 gives a brief, general overview of how to avoid barriers to perception.

How can you ensure that when you write texts your paragraphs progress logically and promote coherence and cohesion? We can also use paragraphs to **contrast** ideas or points.

Look at the following Example.

Let us say you had been asked to write a brief text as a filler for the college magazine on something to do with contrast in nature.

- You decide to write an article on colours of leaves.
- You choose green and autumnal colours as your examples.
- You write a brief description of these.

- You then contrast each of the types you have chosen.
- Your finished text might look something like this:

Colours are an important part of all of our lives. Imagine how dull it would be to live in a totally grey world, with only different shades to enliven our lives. Different colours are used to represent different moods. Colours abound in nature from the brilliant hues of various flowers to the more subtle shades of leaves of which we will look at two examples.

The first example is the most common leaf colour of green. Of course, we all know that the green in leaves is caused by chlorophyll, which is used by the plant to manufacture carbohydrate sugars from water and carbon dioxide in the process known as photosynthesis. Not all leaves are green; many have additional pigments that produce colours other than green despite the presence of chlorophyll, and some may lack chlorophyll in all or part.

The brilliant autumn colours characteristic of the leaves of many plants result from the presence of accessory leaf pigments that normally assist the plant during photosynthesis by capturing specific wavelengths of sunlight. These pigments, called carotenoids, become visible when the leaf dies in the autumn.

Which is your favourite colour for a leaf? Is it the bright green we associate with summer and spring or the more muted yet still varied colours in autumn? Or does this depend on your mood? Do you sometimes just have days when everything simply seems grey?

Hopefully not! Go out there and enjoy our rainbow world! Do you see how each paragraph is used for contrast?



Individual Activity 35

Longer Texts: Introduction and Conclusion

We have looked at writing sentences and paragraphs.

Let's take the next step and look at how we can put together a whole piece of writing, one that is a number of paragraphs long, to make sure that the whole piece is coherent (acts as a whole) and presents a clear message to the reader.

Read the following text:

“If I had to live my life all over again, I’d try to make more mistakes next time. I’d try not to be so perfect. I’d relax more, I’d exercise more, I’d be sillier than I’ve been on this trip. I’d be crazier and I certainly would be less concerned about hygiene. I’d take more chances, go on more trips, climb more mountains. I’d swim more rivers and watch more sunsets, eat more ice-creams and fewer beans. I’d have more actual troubles and fewer imaginary ones.

You see, I was one of those people who lived sensibly hour after hour and day after day. Oh, that doesn’t mean I didn’t have good moments – but if I had to live it all over again, I’d have more of those moments. I was one of those people who didn’t go anywhere without a raincoat, a toothbrush and a parachute. “

If I had to live it all over again, I’d travel lighter next time.” (written by an 88-year-old man who had just learned that he was about to die).

EXPLANATION**What is the message that this writer wants to get across?**

In looking back on his life, the writer reflects on his attitude to living: what he got wrong and what he should have done instead.

How does he structure his writing to get this message across clearly?

Let’s look at how he organises his ideas, paragraph by paragraph.

- He starts with ‘If I had to live my life all over again ...’ and so immediately sets up the context: someone who has lived his life and has some regrets. The next half of that sentence gives the key idea for that paragraph: ... I’d try to make more mistakes next time. This is a rather unusual thing to regret, as most people might regret having made so many mistakes. But then he explains why, by a series of examples that show how his caution made him lose out on the enjoyment of life.
- The second paragraph explains (using the linking words You see) how his caution inhibited him and prevented him from enjoying life to the full.
- The third paragraph is short for emphasis, as it summarises the key idea. Notice that he echoes the opening words of the passage. Why? Because it connects the ending with the beginning, and therefore helps to round it off. He uses a figure of speech (‘travel lighter’) to describe an attitude to life, and having read the passage we understand what he is referring to.

Now let us look at another example before you go on to write your own conclusion and introduction.

Consider the following article from a community newspaper:

TRACKWAY

"Passengers travelling by rail complain that trains are cancelled frequently. According to the management of Trackway many of these delays are caused by theft of copper wiring along the lines, and that they are doing what they can to prevent this theft.

Travelling on some of Trackway's lines can present a grave risk to passengers; frequent robberies, attacks and even rapes and stabbings have been reported on trains. In one case, after passengers threatened to sue the company, Trackway increased the number of guards on the worst-affected lines.

Many train coaches are in a terrible condition, with torn seating, broken windows and dirty interiors. Trackway has announced that 200 new state-of-the-art coaches have been ordered and will soon be in service."

REFLECT:

What seems wrong with this report?

Each paragraph makes sense in its own right, but the whole article seems to be going nowhere. We may find ourselves asking: what is the point of this article?

To answer this, read the three paragraphs again, looking for a pattern. (Clue: count the sentences, compare paragraphs and see if you can find a common pattern in the sentences).

What would you say the point of the article is?

- a) to describe the habits of train travellers
- b) to highlight some of the difficulties of train travel
- c) to introduce Trackway to the reader
- d) to explain Trackway's improvements

Each paragraph has one sentence describing a problem, and one sentence giving Trackway's comment on how it will improve that problem. But the article does not link these paragraphs in any way.

- What it needs is something to hold it together.

- It needs a more explicit headline - to orientate the reader to the topic
- It needs an introduction – to give the scope of what is coming
- It needs a conclusion - to summarise the point of the article as a whole.

Compare this with the original article:

TRACKWAY ANSWERS ITS CRITICS

"Recent surveys have shown a tremendous public negativity towards Trackway, the company that runs the suburban train services in all the country's cities. The company has therefore issued a statement defending its efforts to improve services.

Passengers travelling by rail complain that trains are cancelled frequently. According to the management of Trackway many of these delays are caused by theft of copper wiring along the lines, and that they are doing what they can to prevent this theft.

Travelling on some of Trackway's lines can present a grave risk to passengers; frequent robberies, attacks and even rapes and stabbings have been reported on trains. In one case, after passengers threatened to sue the company, Trackway increased the number of guards on the worst-affected lines.

Many train coaches are in a terrible condition, with torn seating, broken windows and dirty interiors. Trackway has announced that 200 new luxury coaches have been bought and will soon be in service.

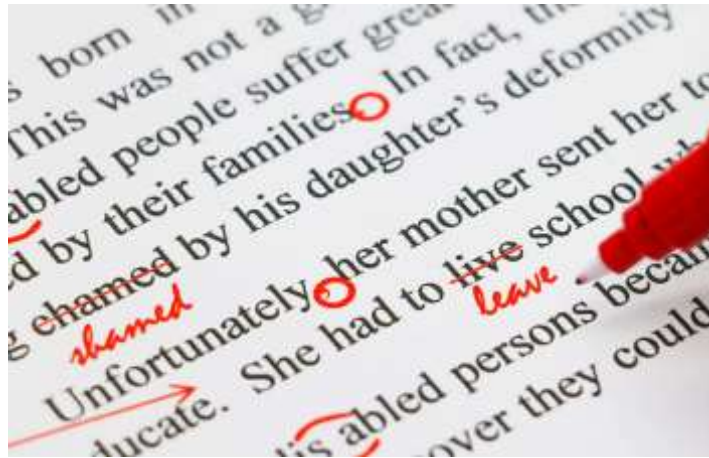
Trackway acknowledges that it is facing severe problems, but says it is doing what it can to stay ahead of these problems."

Does this make it more coherent to read?



Individual Activity 36

Draft And Edit Own Writing



Introduction

In this section we will be looking, in some detail, at how you can use drafting and editing to improve your own writing. At all times you must remember that the purpose and audience are essential aspects to consider when it comes to your own writing.

What do we mean when we say you will learn to draft written texts?

A **draft** is a preliminary version of a piece of writing such as a speech, essay, or report. In other words it is the work we do before we actually complete a piece of text. To **edit** means to prepare a text by correcting errors and ensuring clarity and accuracy.

Grammar Features

Let us now move on to look at how we can ensure that our written work is of as high a standard as possible. There are certain key things we need to be aware of when writing. These have to do with grammar, vocabulary, syntax (sentence structure) and paragraph structure. Let us look at each of these elements in turn.

Grammar refers to the system of rules by which words are formed and put together to make sentences. Correct grammar is important because it ensures clarity. It is extremely irritating to receive written documents that are ungrammatical. We can often get away with making grammar errors when we speak but it is not acceptable to make them when we are writing something.

If you are unsure of whether or not something is grammatically correct, rather express yourself more simply, in order to avoid making grammar mistakes.

English grammar rules can be quite complicated. If you are not sure whether you use correct grammar, try the following:-

Ask someone to edit

Ask someone whom you know to be good at English, to point out all your errors to you.

Try to correct those errors that have been pointed out to you. x Try reading as much English as possible. Focus on reading short articles in newspapers or magazines. Choose topics that interest you. As you read, be aware of the language use. Mentally check whether that is how you express yourself.

If you are using a computer that has a grammar check facility, always use that when you have to write something. Try to understand the reasons for the errors that are highlighted.

Always remember to use your spelling check facility on your computer. Take note of errors that are highlighted and try to improve your spelling - poorly spelt documents create a very bad impression on your readers or audience.

If you do not use a computer, then invest in a dictionary and use it when you are unsure of any spelling.

You will be amazed at how following all these tips will improve your communication skills!

Consistency means the ability to maintain a particular standard or repeat a particular task with minimal variation. In other words, it means to maintain an even and equal standard.

How does this apply to sentences and paragraphs? Think of length and tone of sentences. If the purpose of a piece of writing was to tell a story (narrative text) it would probably be appropriate to use quite long sentences. This would also be true in descriptive writing. It would become confusing in terms of clarity, if the sentences were **inconsistent** in length and tone.



Individual Activity 37

Logic and Unity

Now let us move on to look at how the logical sequencing of ideas and overall unity can be achieved through redrafting.

What do we mean when we talk about a "**logical sequence**"? This refers to the way ideas follow one another in a way that makes sense to the reader. Sometimes you can have very

good ideas about a topic but because these are not presented in a well thought out way, the meaning of what you are writing about, gets lost.

It is very important to make sure that your main points are arranged in a sensible and logical way. For example, if you were trying to explain to someone how to use a lamp, you would start by telling them to check it was plugged in because that is the logical place to start. It is the same principle when you are writing a longer text - the ideas must flow logically.



Individual Activity 38

Removing Offensive Language

We are now going to look at ensuring that you do not use inappropriate or offensive language when you are writing. It is important in any form of communication to use appropriate and inoffensive language. This is, however, particularly true when dealing with people in positions of authority over you and in formal settings. Friends may forgive you if they feel insulted, but strangers or our seniors will rarely be so forgiving!

What do we mean by offensive language? **Offensive language** is language which is upsetting, insulting, or irritating; it is language that causes anger, resentment, or moral outrage; e.g. "My parents find all the swearing on TV very offensive"; or "Aneesa finds people making fun of Islam very offensive".

All language that reflects a negative bias towards a group of people is offensive and inappropriate. You must avoid using such language in your writing. We also mentioned in an earlier Unit that extremely offensive language is classified as "hate speech" (even if it is written) and you can be prosecuted for using it.

How can we ensure that we do not use offensive language? One way is to think how we would feel if we read about our own cultural, sporting, family, or economic level being described in insulting terms. We would feel upset and possibly even angry.

Let us look at some examples of offensive writing.



1. "Hi there my mate, Howzit today?" (extract from a labourer to his managing director.)

Inappropriate register; insensitive choice of words in terms of rank.



2. "The man is unashamedly a moffie." (extract from a report about a staff member from the human resources manager.)

Offensive choice of word for sexual orientation.



3. "Ms Garrett, representing the inferior sex, reported on maternity leave." (extract from Minutes of a meeting).

Offensive sexist language.



4. "Mr Monwabisi, who is obviously filthy rich, has bought another farm." (extract from a memo to a fellow student.)

Offensive way of referring to wealth.

At all times be aware that offensive language is potentially very harmful and destructive. Ensure that in your writing you avoid using terminology to describe people which could be classed as offensive. All racist, sexist, ageist, lookist (regarding the way people look) or ethnicist remarks are offensive and potentially very damaging. They will lead to a breakdown in communication and are to be avoided at all costs.

We need to look at excessive use of jargon as examples of insensitive and inappropriate language use. These are to be avoided in written texts. What do we mean by obfuscation? Obfuscation refers to making something obscure or unclear, especially by making it unnecessarily complicated, e.g. "The directions on how to get to the party were obfuscated by so much detail, that we got lost."

Layout and Presentation Options

When considering the layout of your presentation or write up you need to remember that it needs to be appropriate to the nature and purpose of the task. With word processing and computers we now have a wide range of formats available to us when we need to present written texts. You should feel free to experiment with various things like fonts, font size,

italics, the bold function and space bar. Remember though to bear the context, purpose and audience in mind at all times.

You must feel free to experiment but always bear the following questions in mind:-

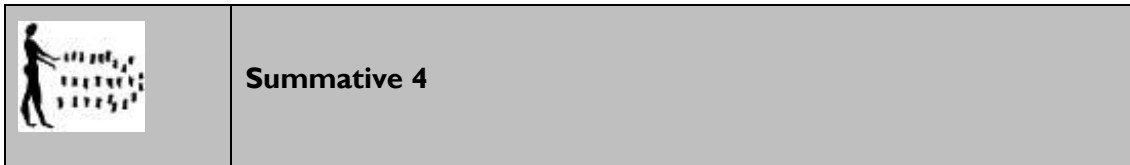
- What is the context of your presentation?
- Who is the intended audience?
- What is the purpose of your written communication?
- Does your presentation lead to greater clarity?

You may like to develop a particular presentation style for each of the following:-

- Emails to friends.
- Emails to peers.
- Emails or letters to lecturers.
- Business letters.
- Reports for academic purposes.
- Any other form of written presentation, such as essays, that you do regularly.
- PowerPoint presentations

Refer to Annexure I4: Editing Checklist

The checklist serves as a tool for reviewers to use when checking a publication.



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Annexures

Annexure I: Guidelines for Good Agricultural Practices

The following is a summary of the areas for which GAP guidelines have been developed.

Land Use and Soil

- Cultivated land information
- Current or prior use of adjacent land

Water Sources and Irrigation Practices

- Potential contamination associated with water sources
- Hazards introduced by irrigation practices
- Chemigation
- Agricultural water microbiological testing procedures

Implementation of Soil and Water Conservation Principles – Organic Fertilisers

- Management of organic fertilisers
- Hazards associated with animal manure and treatments to reduce the risks
- Hazards Associated with manure treatment and storage location
- Precautions for the application of organic fertilisers
- Keeping complete records of organic fertiliser preparation and use

Implementation of Soil and Water Conservation Principles – Inorganic Fertilisers

- Keeping complete records of inorganic fertilisation programs

Animal Exclusion from Production Areas

- Methods for keeping animals out of production areas
- Cleaning surrounding areas
- Animals and water

Pest Control

- Pest Control in fresh produce operations
- Common pest control procedures
- Pesticides
- Pesticide handling
- Pesticide application
- Pesticide storage
- Pesticide residues

- Pesticide disposal
- Training and documentation

Worker Health and Safety

- Relationship between worker health and hygiene
- Health programs
- Worker hygiene training program
- Drinking water
- Worker hygiene practices and sanitation facilities
- Hand washing and hand-washing facilities
- Basic requirements for and placement of sanitary field stations

Safety Hazards Associated with Harvesting

- Physical damage caused by mechanical and / or manual harvesting methods
- In-field packaging operations

Safety Hazards Associated with Post-Harvest treatments and handling

- Post-harvest water quality
- Cooling considerations

Annexure 2: Safe Use of Pesticides

Pesticides

Pesticides are toxic chemicals that are used to protect crops, to control household pests and nuisance insects, and to eliminate vectors of human and animal diseases. Vectors are organisms that carry pathogens from one host to another.

Classes of pesticides are commonly named after the pests that they help to control, for instance insecticides control insects, herbicides control weeds, fungicides control fungi, and rodenticides control rodents.

Since pesticides can be extremely harmful, they should be applied, handled and stored in accordance with the instructions given on the label or on the manufacturer's safety data sheet for the product. Because of the potential health hazards associated with pesticides, application rates should be controlled to limit the number of residues on produce and only pesticides approved for use on a specific product or in food processing facilities should be used.

Registration of a pesticide is a scientific, legal and administrative process to enable authorities to control quality, use levels, labelling, packaging and advertising. Data required for registration of a product include its chemical and physical properties, effectiveness, toxicity for assessment of human health hazards and a prediction of the environmental effects that it may have.

Pesticides should be used only when needed and only in the amounts that will adequately control pests. Minimising the amount of pesticide used reduces costs and helps to protect the environment. The pesticide label is the ultimate source of information for determining the proper application rates for a specific pesticide.

It is recommended that growers document and verify that the pesticides used come from certified distributors, and that competent authorities approved their usage.

Pesticide Handling

Pesticide handling should be controlled through every phase, from acquisition through storage to use in the fields. It is very important that the persons in charge of handling these products are aware of the possible danger that they hold, and follow the instructions printed on the label or on the information page that usually accompanies the product.

Pesticide Application

The instructions for application of a particular pesticide should be read carefully before using the product. Information such as restrictions for its use, application rates, approved doses,

number of applications and minimal intervals between applications should be carefully considered. Pesticides are supplied in liquid, solid, or gaseous forms. It is important to follow label instructions for the mixing, loading and handling of the specific pesticide being used and the actual conditions of use. The amount of pesticide concentrates needed to treat a specific site should be carefully calculated. The water used to prepare pesticides should be free of pathogenic organisms.

Special attention should be paid to spray equipment, pumps and nozzles used to apply pesticides. To minimise the potential for over or under treatment, accidents and spills, they should be calibrated for accuracy and checked frequently for malfunctions. Spray equipment should be regularly washed to prevent possible contamination of fruits or vegetables with compounds not authorised for that commodity and to avoid accidental overdosing.

Warning signs should be posted on fields that have recently been treated with pesticides to prevent workers or visitors from inadvertently coming in contact with treatment chemicals. Such signs should only be removed after the established re-entry period into the field has passed so that residual levels are at an acceptable level.

Pesticide Storage

The amount of pesticide on hand should be kept to a minimum by buying only what is needed for the season or for the specific application. The pesticide storage facility should:

- Be properly identified and signposted
- Be away from animal shelters, human habitations and all water sources
- Have a concrete floor to facilitate clean up in the event of a spill or leak

Pesticide Residues

High levels of pesticide residues on crops may be a hazard to humans who eat the produce. To regulate pesticide residues, a legal limit known as the maximum residue limit (MRL) is developed for each pesticide. The MRL is the maximum level of residue of a chemical substance that is legally permitted to remain in or on a crop when sold. This limit is used to provide reasonable assurance that the consumer will suffer no adverse effects from consuming the product, even over a lifetime of exposure.

Although strict adherence to MRLs might not be feasible for some countries because of economic constraints, those countries relying on food export profits should monitor for and comply with these MRL levels in order to maintain credibility as responsible exporters. The Citrus Growers' Association of Southern Africa publishes and updates a document called The

Recommended Usage Restrictions for Plant Protection Products. This document indicates the MRL for all plant protection products that is registered for use on in South Africa, and the withholding period for each product. The withholding period is the length of time before the fruit is harvested that the product must not be applied in order to ensure that the residue levels will be within the acceptable range when the fruit is harvested. Although this will give a good guideline to all fresh fruit the specific regulations need to be obtained for a specific fruit.

If the guidelines contained in this document are strictly adhered to and the pesticides are applied in the correct dosages, the risk of exceeding MRLs is limited.

Pesticide Disposal

Instructions and restrictions on pesticide disposal are available from the product's manufacturer and may also be established by local environmental regulations.

Empty pesticide containers should be washed multiple times and taken to an appropriate place for disposal. Empty, properly rinsed containers can be disposed of at most sanitary landfills. In view of the persistent, volatile nature of many pesticides, disposal by burning or burying on the farm is discouraged. Never dispose of pesticides or pesticide containers in unused wells or near water sources.

Excess spray and rinse water from cleaning of equipment can be sprayed on sites or crops listed on the label.

Training and Documentation

Records of training for the proper handling and application of pesticides should include:

- Employee's name
- Experience or employment date
- Position or job performed by the employee
- Date of training
- Training topics
- The institution responsible for training and instruction records or certificates
- Signature of trainer

Pesticide records must contain information on:

- Crop data (variety, planting date, etc.)
- Name of pesticides used
- Place of application
- Dosage

- Application dates
- Time period before harvest
- Name of the person responsible for the application

Date of last equipment calibration

Annexure 3: Pre-Harvest Internal Audits

A pre-harvest internal audit on a fruit farm is normally conducted as a single audit, usually in the following sequence:

- Chemical storage
- Fertilisers
- Water and irrigation
- Waste disposal and pollution
- Transport from orchard
- Machinery and equipment maintenance
- Personal hygiene
- Training

On the next pages are examples of internal audit documents for each of these points. Please note that these are examples only and that the work papers used on specific farms will depend on the risk assessment and circumstances on that farm.

Chemical Storage

Internal Audit – Food Safety				
Chemical Storage				
Auditor			Responsible Person	
Signature			Audit Date	
Question			Y/N	Defects
1.	Are there sufficient warning signs?			
2.	Are there signs for no smoking, eating or drinking?			
3.	Is the storage area always locked?			
4.	Is there a safety gate to the storage facility?			
5.	Are only authorised personnel allowed in the storage area?			
6.	Are there hand washing and showering facilities?			
7.	Are clothing stored separately?			
8.	Is the ventilation adequate?			
9.	Is non-absorbent shelving used?			
10.	Are the powders stacked above the liquids?			
11.	Are the chemical stored in their original containers?			
12.	Is there emergency procedures?			
13.	Is there a pail with sand to clear up spillages?			
14.	Are agrochemicals transported in a safe and secure manner?			
15.	Is there a system in place for the disposal of wastewater?			
16.	Is all documentation up to date?			
17.	Are MRL lists and safety data sheets present and accessible?			
18.	Is the yearly residue analysis available?			

Corrective Action	Person	Target Date	Completion Date	Signature	Verify (Date and Signature)

Fertiliser

Internal Audit – Food Safety					
Fertilisers					
Auditor			Responsible Person		
Signature			Audit Date		
<i>Question</i>			<i>Y/N</i>	<i>Defects</i>	
1.	Are inorganic fertilisers stored at least 10m from ditches, water courses and other water sources?				
2.	Are there retention walls where inorganic fertilisers are stored?				
3.	Are all concentrated fertilisers stored under cover?				
4.	Are all hazardous and risk areas sign-posted?				
5.	Are the personnel trained in the handling of fertilisers?				
6.	Are documentation, records, and safety data sheets up to date?				
<i>Corrective Action</i>	<i>Person</i>	<i>Target Date</i>	<i>Completion Date</i>	<i>Signature</i>	<i>Verify (Date and Signature)</i>

Water and Irrigation

Internal Audit – Food Safety					
Water and Irrigation					
Auditor		Responsible Person			
Signature		Audit Date			
<i>Question</i>			<i>Y/N</i>	<i>Defects</i>	
1.	Have no untreated sewage water been used for irrigation?				
2.	Have records been kept of the water volumes deposited during irrigation?				
3.	Have routine water analysis been taken of water used from water sources where there is a potential pollution risk?				
4.	Have an annual risk assessment for water pollution been completed?				
<i>Corrective Action</i>	<i>Person</i>	<i>Target Date</i>	<i>Completion Date</i>	<i>Signature</i>	<i>Verify (Date and Signature)</i>

Waste Disposal and Pollution

Internal Audit – Food Safety				
Waste Disposal and Pollution				
Auditor		Responsible Person		
Signature		Audit Date		
<i>Question</i>			<i>Y/N</i>	<i>Defects</i>
1.	Are there procedures and facilities in place for storage and disposal of hazardous materials?			
2.	Is suitable provision made for the removal of waste?			
3.	Is waste stored in suitable containers with lids in the orchard?			
4.	Are there any indications that the production practices may cause pollution?			

<i>Corrective Action</i>	<i>Person</i>	<i>Target Date</i>	<i>Completion Date</i>	<i>Signature</i>	<i>Verify (Date and Signature)</i>

Transport from Orchard

Internal Audit – Food Safety						
Transport from Orchard						
Auditor		Responsible Person				
Signature		Audit Date				
<i>Question</i>			<i>Y/N</i>	<i>Defects</i>		
1.	Are the vehicles, trailers and crates cleaned regularly?					
2.	Are drivers trained to operate vehicles and machinery?					
3.	Are drivers instructed to drive at the proper speed through orchards to minimise dust?					
<i>Corrective Action</i>		<i>Person</i>	<i>Target Date</i>	<i>Completion Date</i>	<i>Signature</i>	<i>Verify (Date and Signature)</i>

Machinery and Equipment Maintenance

Internal Audit – Food Safety					
Machinery and Equipment Maintenance					
Auditor		Responsible Person			
Signature		Audit Date			
<i>Question</i>			<i>Y/N</i>	<i>Defects</i>	
1.	Are all machinery in a good condition and cleaned regularly (spray machines, trailers, herbicides carts, etc.)?				
2.	Are all equipment in a good condition and cleaned regularly (pruning sheers, saws, clippers, etc.)?				
3.	Are all maintenance records and schedules in place and up to date?				
<i>Corrective Action</i>	<i>Person</i>	<i>Target Date</i>	<i>Completion Date</i>	<i>Signature</i>	<i>Verify (Date and Signature)</i>

Personal Hygiene

Internal Audit – Food Safety					
Personal Hygiene					
Auditor		Responsible Person			
Signature		Audit Date			
Question				Y/N	Defects
1.	Do all workers wash their hands before handling fruit and after using the toilet?				
2.	Do all workers have clean protective clothing, head coverings and footwear?				
3.	Is there no spitting, chewing, eating, smoking, drinking, sneezing, and coughing over fruit?				
4.	Is hair clean, tidy and covered?				
5.	Are no personal items taken into the orchard?				
6.	Are all fingernails short and clean, with no nail varnish and no false fingernails?				
7.	Is no jewellery allowed in the orchard?				
8.	Are all cuts and open sores properly dressed with bandage or a plaster?				
9.	Are all serious skin complaints reported to the health worker?				
10.	Are no transmissible or infectious disease carriers allowed to work with fruit? (please report)				
11.	Are incidences of transmissible or infectious disease carriers reported to the health worker?				
12.	Are all field toilets equipped with soap, water and disposable towels?				
13.	Are all the toilets kept clean and is there a cleaning schedule available?				
Corrective Action	Person	Target Date	Completion Date	Signature	Verify (Date and Signature)

Training

Internal Audit – Food Safety					
Training					
Auditor		Responsible Person			
Signature		Audit Date			
<i>Question</i>			<i>Y/N</i>	<i>Defects</i>	
1.	Are all personnel operating machinery trained and do they have the necessary certificates?				
2.	Are all personnel working with plant protection products trained and do they have the necessary certificates?				
3.	Are all personnel trained in food hygiene and food safety and do they have the necessary certificates?				
4.	Are all personnel trained in personal hygiene?				
5.	Are there at least one person trained in First Aid?				
6.	Are there in each harvesting team at least one person trained in basic food handling hygiene?				
<i>Corrective Action</i>	<i>Person</i>	<i>Target Date</i>	<i>Completion Date</i>	<i>Signature</i>	<i>Verify (Date and Signature)</i>

Annexure 4: Implications of the Value Chain and Value Add to Products For the Farmer

The amount of detail that you include in your value chain depends in part upon the final product that you most identify with. For many producers, this is a difficult question. Just identifying where the product goes after it leaves your business is an important first step. Ask yourself, how and in what ways, your production finally reaches the consumer. This question can have very different answers depending on where you are in the value chain. Grain producers will likely have many ways in which the product reaches the final consumer and may have little control over where or how their product reaches the consumer. For these producers, it is key to identify the major channels or classes of products that reach the consumer. For instance, grains are often converted to manufactured cereal products, feed and feed products, etc. On the other hand, fresh fruit or vegetable growers may have a great deal of control over how their product reaches the consumer. These growers will likely want to be much more explicit with respect to the final product that they produce, i.e., fresh apples sold at roadside stand, apples picked by consumers in the orchard, apples put in storage and sold in a retail outlet, and apples processed for juice. The key is to identify the various ways in which your product reaches the consumer.

The amount of detail that you use in constructing the value chain will depend in large part upon the degree of **differentiation** that exists between you and your competitors. By simply considering the alternative ways in which your product reaches the final consumer, you can begin looking for ways to differentiate yourself from your direct competitors and making your product more attractive to members of certain value chains.

The next key factor to consider is the **economic relationship** between the various parties in your value chain. The **number and size** of the competitors at a particular stage of the value chain can have important consequences for other members of the chain. A dominant player at one stage in the chain can place many demands on smaller players with many competitors. Often, stages near the dominant player will react by trying to match the dominators size and influence. Sometimes this involves consolidation or forming cooperatives.

Another factor to look for at any stage is the importance of **economies of scale**. These are typically important in the processing stages. Economies of scale can dictate how processors want to interact with other players. Often, they will want to ensure that product continues to flow through their plants. Food safety and contamination risk are even more important when a player has large economies of scale. A contamination can be very costly for any player, but one with

large economies of scale and thus volume is especially at risk. Look for these firms to be very sensitive to the quality and origin of the product coming into their plants.

Biological production risk and perishability are frequently important characteristics of agricultural value chains. Biological production uncertainty can have important implications for the consistency of supply-to-supply chain members. This is especially important when there are economies of scale present. Perishability can have important impacts on the logistics and handling of food products. It will also influence the responsiveness of supply and will limit the amount of substitution that can take place when a weather event reduces production.

You will often want to examine the **economic relationships that govern the transactions** taking place at each stage of the value chain. These factors can be especially important because they can make price discovery difficult and can limit access to a value chain. For instance, many retailers and branded product manufacturers are moving toward networks of preferred suppliers. These networks do not operate like traditional agricultural markets which are open to everyone. In order to participate, the supplier must typically qualify or meet certain production standards. In many cases, the manufacturers and retailers are looking to reduce rather than expand their supplier networks.

Finally, you want to be aware of key **consumer trends and key technological advances**. In agriculture, the development of biotechnology has the potential to dramatically change value chains because the technology has important implications at both ends of the value chain. Consumer attitudes toward biotechnology will create new niche markets for value chains which either do or do not use biotechnology. Likewise, new products will be developed and potentially create new value chains. Further, biotechnology will impact the role of food processors in the food system as food products are refined at the genetic rather than the plant level.

What key factors can destabilise or adversely affect the value chain:

- The weather in a geographic region can affect crop quality and volumes.
- Differences in production level within and across regions
- Seasonal influences
- The maturity of the market
- Market logistics
- Market outlets
- Storage facilities
- Ability to produce early or late crops
- Access to local, regional, and foreign markets

- Access and availability of crop inputs
- Ability to produce quality and quantity
- Ability to deliver on time
- Ability to track and trace product
- Proximity to markets
- Transport

It is the task of the farmer to combine and consider all these influences and to try to get the best price. However, the factors that influence price can be divided into factors which can be influenced and factors which cannot be influenced.

Annexure 5: Department of Agriculture Guide on Market Information Systems

In 2010 the Department of Agriculture, Forestry and Fisheries published an Agricultural Marketing Strategy Report. Following are details on Agricultural Market Information Systems:

At the simplest level, availability of market information can enable farmers to check on the prices they receive, vis-à-vis the prevailing market prices. Commercial farmers are capable of sourcing price and buyer information from websites, publications and commodity associations while developing farmers rely on other farmers and government extension staff for the same information.

There is therefore a great need to make information available to developing farmers at the right time and place. In response to this challenge the national Department of Agriculture, Forestry and Fisheries shall—

- analyse various agricultural marketing value chains in the livestock, horticulture and field crops subsectors and make this information available to stakeholders as market value chain/commodity profiles on an annual basis; and
- develop and distribute quarterly market analysis bulletins for key commodities within the three subsectors (i.e., livestock, horticulture and field crops).

Furthermore, the national Department has expanded the market information system network to the remotest areas by:

- Cell phone technology through the use of the Short Message System or SMS (This tool will be able to disseminate the most crucial information on prices to farmers.)
- Radio broadcasts (Market prices for various products can be broadcast daily on radio stations for all major production areas or markets. Broadcasts should be in a form that is suitable for most farmers as some are illiterate, should be in various languages and at the most convenient time for farmers to be listening. Radio stations should be convinced to see market information as a public service, equivalent to news broadcasts, and not paid advertisements. The ministry of agriculture or designated body should take the responsibility to monitor the relevant website/s and forward this information by e-mail or fax to each station.
- If the MIS is to have an impact on developing farmers, the provision of market information must be accompanied by the provision of advice for the farmers on

interpreting the information. Ideally, special radio and television programmes to explain the MIS, the information provided and how to use it should be prepared and aired at least once a quarter.

- The MIS Unit can also prepare training materials to carry out the training programme themselves or train the trainers in the provinces and districts, who should ideally be agricultural economists.)
- The Agricultural Display Technology System (ADTS), which uses plasma displays (ideally situated in the provincial and district offices of agriculture, multi-purpose community centres and agricultural development centres), connected centrally to computers which are connected by a network to a central computer from where the system is managed and updated daily (This system can display daily prices of products, commodity prices, exchange rates, weather conditions, fuel prices and any other important information the department sees fit.)
- Newspapers or the print media

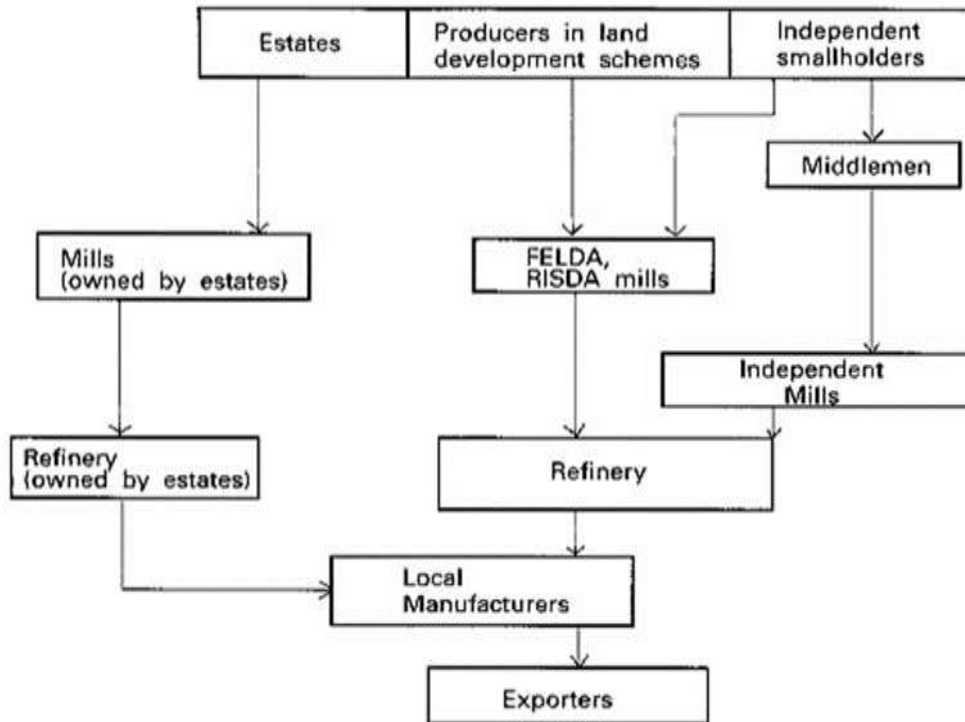
In addition to the expansion of the agricultural Marketing Information System (MIS), both the department and the entire agricultural industry realise the importance of reliable information for efficient functioning of agricultural markets and therefore the department will—

- facilitate a process leading to the establishment of information platforms similar to SAGIS (South African Grain Information Service) in the livestock and horticulture industries to provide these agricultural industries with vital marketing information; and
- establish a fully fledged agricultural MIS Unit to undertake collection, collation and dissemination of agricultural marketing information.

It is further proposed that SAGIS be expanded to cater for the information needs of other field crops that are currently not covered. To achieve this, the national Department of Agriculture, Forestry and Fisheries shall collaborate with the latter two industry bodies and the respective agricultural industry trusts. All agricultural industries that collect statutory levies and have industry trusts shall be encouraged to create these information platforms and hyperlink them to the department's agricultural MIS.

Annexure 6: Small Holder Farmer Marketing Channels

Marketing Channels for Produce from Smallholder Farms



The figure above illustrates the different paths that followed from produce harvested and sold by smallholder farmers until it reaches the consumer. Produce from smallholder farmers is sold to consumers and traders at the farm gate, usually through informal transactions where prices and terms of exchange are unofficially negotiated.

Smallholder farmers face difficulties in accessing markets and as a result, markets do not serve their interests. Technical and institutional constraints make it difficult for them to access commercial markets.

Good roads, transportation and communication links are prerequisites to market access. Proper post-harvest handling and storage contribute in ensuring quality maintenance for perishable agricultural product.

Smallholder farmers often rely on open-air storage and therefore are keen to sell produce almost immediately after harvesting, leading them to sell their product at a lower price.

Road infrastructure and transport availability have an influence on smallholder market participation, especially if they are located in rural areas. Inability to transport products in time may result in produce spillage and losses.

Annexure 7: Cooperative Marketing and Distribution

A cooperative is an organisation comprising a number of individual farmers as its members. A cooperative is formed to benefit from the economies of scale that their collective supply and marketing of product can achieve. This benefit can take various forms, most of which relate to the increased bargaining power that large volumes of products can achieve over smaller, fragmented volumes.

In terms of the marketing and distribution of fresh farm products, the cooperative has certain features that make it either attractive or unsuitable as a structure for individual growers to use.

The members of the cooperative usually comprise a number of individual farmers located within close proximity of distribution channels. As a group the producers can offer the market-sustained volumes of a range of products or cultivars over an extended period.

The management of the cooperative negotiates with distribution service providers and evaluates market segment options on behalf of its members. Armed with the supply volumes of its members, the cooperative is able to negotiate from a position of strength and is usually able to conclude favourable contracts with export agents and importers.

One factor that can weaken the cooperative's bargaining power is the potential variability of the quality of produce emanating from its range of producers. All cooperatives have strict quality management systems in place, but quality variation is an inherent risk in system where fresh farm products are supplied from many individual producers.

Distribution Channel Budget

Most costs associated with the production and packing of fresh farm products are fixed.

Since there are various distribution options and logistics service providers from which to choose, costs can be saved in this area. It is therefore important to compare prices for the various stages of the distribution chain and use this information to create a distribution channel budget.

The distribution budget serves as the financial expression of the distribution plan and in its formative stages is a useful tool for comparing different options.

Monitoring Distribution Channels

It is important for the farmer to enter into a contract or service-level agreement with the chosen transport and logistics service provider. In this agreement, the required service delivery standards should be clearly described.

The actual service delivery is measured and monitored against this agreement, and payments are made accordingly.

To ensure ongoing compliance by the service provider, it is important to maintain short interval control so that service delivery problems can immediately be brought to the attention of the service provider and appropriate action taken.

Monitoring the productivity of Transport providers and Distributers

The most obvious way of measuring the efficiency of transport and distribution contactors involved in the fresh farm product supply chain relates to the final condition and quality of the product they have been responsible for conveying.

Fresh farm products are by nature, perishable products with a limited shelf life. Once the product has been produced, harvested and packed, time and temperature become the crucial parameters determining its quality and condition during and after the transport and distribution process.

Annexure 8: Other Non-Conventional Markets

Non-Conventional Markets

Formal research on alternative marketing mechanisms has been scattered and hard to access by producers. It is mostly experiential and unrecognised by the agricultural establishment and official information channels. Small farmers and grassroots farm groups are the most likely to develop and use innovative marketing methods. The assumption that farmers must either "get big or get out" is being challenged, however, by the emergence of alternatives. It is possible for innovative farmers to stay small or medium-sized and make a comfortable and successful living from agriculture.

Agri Tourism

An alternative agricultural specialty currently attracting a great deal of attention is agri tourism. Although not every family is willing or able to entertain the public, for those who enjoy meeting new people or hosting groups, a farm entertainment enterprise is a good opportunity for selling on-farm processed items. But on-farm processors must be aware of regulations governing their enterprise. If a food product is being produced, usually a commercial kitchen is required.

Producer Alliances

Large scale processing through producer alliances, such as agricultural cooperatives or limited liability companies, has seen growing interest among producers. These alliances can offer a way to pool resources and manage risks. In some cases, producers lose marketing or processing facilities when corporate agribusinesses close local facilities.

Farmers Markets

Ordinarily, retail markets command the highest price per kilo of product, while wholesale markets move more of the product than retail markets but at lower prices. Farm sales and farmers' markets and mail-order are typically low-volume markets. Restaurants, retail stores, cafeterias, health food stores, and caterers constitute mid-volume markets, where prices are better than wholesale but on the lower end of retail. Smaller farmers may find that selling to low- and mid-volume markets works best for them. Mid-volume markets, especially, offer the advantage of small to medium crop production as well as medium to better prices.

There has been an explosive growth in the number of farmers' markets around the country. Farmers' markets seem to work best for growers who offer a wide variety of produce of the type desired by customers. Consumers want markets to be easily accessible with good parking

facilities. A little related entertainment never seems to hurt—seasonal festivals, street musicians, tastings, demonstrations, etc. Sales help must be pleasant and courteous, willing to answer questions.

Farm entertainment

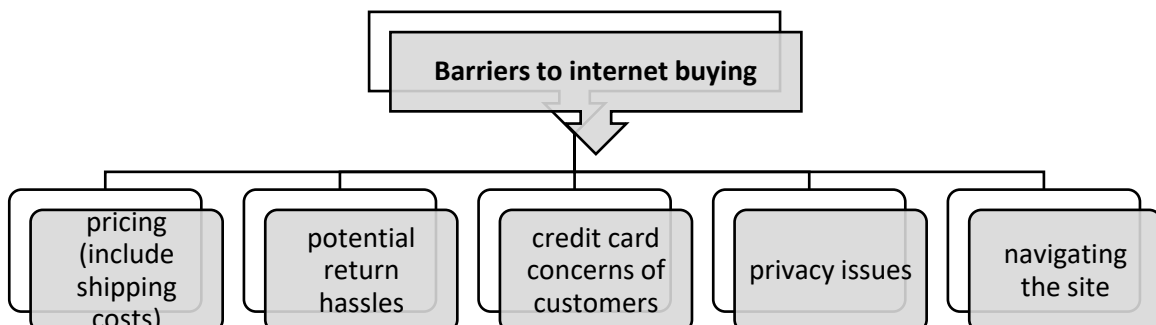
Some producers are entering the growing "farm entertainment" sector. Marketing strategies may include educational tours, an on-farm market with opportunities to buy fresh produce or value-added products, ready-to-eat food, festivals, classes, seasonal events. Such enterprises work best when farms are within 50 kilometres of a major population centre, preferably on or near a good road. In addition to the expected parking, toilet facilities, harvesting instructions, creative signage, and playgrounds, adequate liability insurance must, of course, be in place.

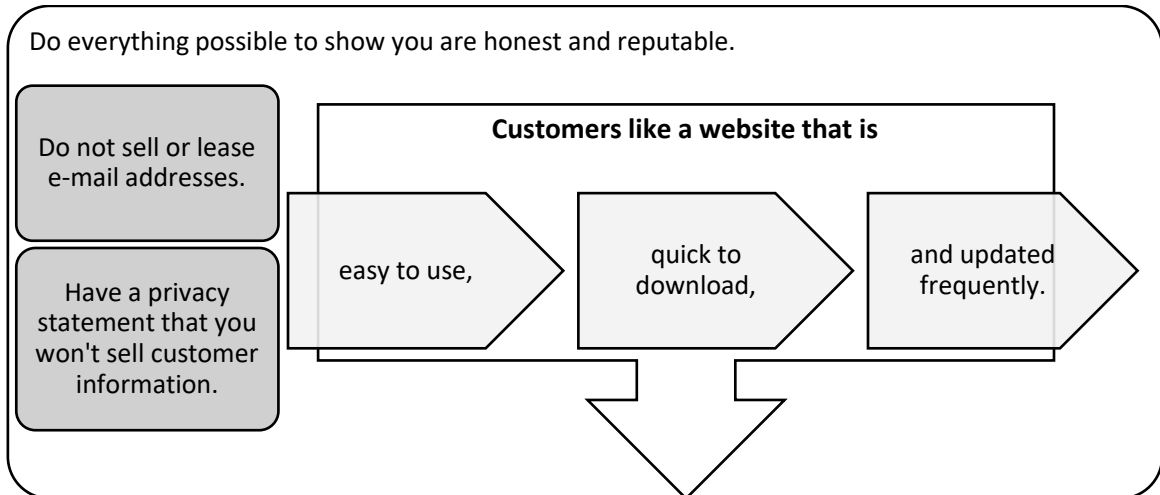
Internet

Plans for selling groceries on the Internet are taking their place along with other forms of e-commerce. High-value, non-perishable, low-weight specialty food products and nutritional supplements have been available from a growing number of websites for some time. Delivery is by conventional package delivery systems; this form of e-commerce may be considered another form of mail-order.

Another way to utilise the internet is to have a farm or business homepage purely for advertising purposes (perhaps cooperatively packaged).

Farms can do business on the Internet either by maintaining their own individual websites, or participating in a directory listing. Look at internet marketing as an opportunity to attract a new clientele, but first determine whether existing customers are on the Internet. Do they have e-mail? Be aware of certain barriers to internet buying:



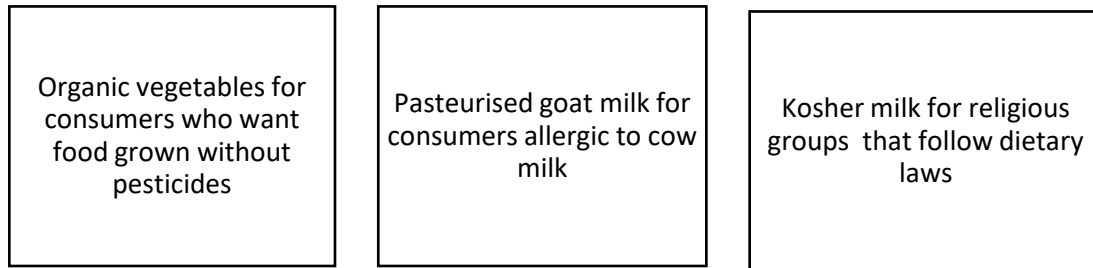


Be cautious about graphics that take a long time to come up on screen. At least give customers the option to bypass graphics. Look into ways to increase search engine results for your site, so that it appears in the first five or ten that come up.

Put your internet address everywhere—on all stationery and items that go out. Offer freebies (samples) when filling orders. Have a raffle. Develop a kids' e-mail mailing list and send birthday cards. Send fall holiday greetings. List your competitors' prices (shown to be effective). Make your website interesting. When creating your webpage, call the first page "index" to aid search engines. Constantly test and evaluate your site.

Word-of-mouth advertising by satisfied customers is priceless and cannot be purchased or engineered except by providing good service and a good product. Because an estimated 80% of business comes from return buyers, the focus is on rewarding loyal customers by offering discounts, gift certificates or a free service.

Annexure 9: Examples of Niche Markets in Agriculture



New Niche market for grain producers: Pseudo-grains (Farmers Weekly 2 Oct 2013)

The newly formed NuGrainSA Consortium recently introduced the so-called pseudo grains quinoa, buckwheat, millet and grain amaranth to the South African agricultural fraternity. William Weeks says the consortium's vision is to introduce broad-leaf cereal crops to the South African economy.

A group of plants, collectively referred to as pseudo-grains, may be the start of an exciting chapter in the history of South African agriculture. The term pseudo-grains refers to grains produced by broad-leafed plants, in contrast with other grains, which are produced by grasses. Three pseudo-grains – quinoa (*Chenopodium quinoa*), grain amaranth (*Amaranthus cruentus*, *A. hypochondriacus* and *A. caudatus*) and buckwheat (*Fagopyrum esculentum*) – are globally recognised and utilised.

Grain amaranth and quinoa belong to the related plant families Amaranthaceae and Chenopodiaceae and originated in South and Central America, whereas buckwheat, a member of the family Polygonaceae, has its origin in Central Asia. The discarding of South American-based pseudo-grains can probably be laid at the feet of Spanish conquistadores who prohibited production of these grains in their efforts to subdue local tribes. The natives' practice of mixing amaranth grain (which was produced on par with maize) with human blood during local ceremonies didn't help matters and effectively prevented export of these valuable crops.

Pseudo-grains share several important traits. They have stood the test of time, having been cultivated for thousands of years. They are produced by hardy plants with relatively short to very short growing seasons. And they have a high protein content and contain no gluten.

Pseudo-grains in South Africa

Pseudo-grains have received little attention in South Africa and have not been produced on a scale comparable to that of traditional grains. The first record of amaranth production in South Africa dates back to the 1990s. Considerable efforts were made between 1994 and 1996 by the North-West Department of Agriculture and Rural Development and Free State University, in collaboration with the then Bothaville-based Tamco company, to investigate commercial leaf production from *Amaranthus hybridus* in South Africa. Emphasis was placed on a regimen of repeated harvesting, alternating with periods of regrowth.

The first attempts at producing amaranth grain were made at Roodeplaats by the Agricultural Research Council's Vegetable and Ornamental Plant Research Institute (VOPI) during the 2000/2001 and 2001/2002 planting seasons. This introduction of grain amaranth formed part of an incentive to produce grain for the European market. The project was started as a joint venture between VOPI and a company based in Germany and Austria.

These attempts at grain production were not sustainable because the focus was on organic production, which proved too difficult given the allocated timeframe for implementation. Less favourable climatic conditions for organic production in South Africa also played a part in preventing successful grain production. In spite of the project's failure, efforts towards grain production made at VOPI proved that amaranth grain production was possible in this country.

The current drive for the development of pseudo-grains was initiated by the North-West department of agriculture. The NuGrainSA Consortium has made use of dormant capacity in the institutions previously involved – the Free State University and ARC VOPI. In addition, North-West University has added considerable value to the initiative, especially in industrial development and food technologies. This inter-institutional and inter-disciplinary approach looks set to meet with success.

A promising future

Pseudo-grains present the industry with many opportunities and possibilities. There is a potential to fortify existing grain products due to the low gluten and high protein content of pseudo-grain flour. Protein quality, rather than content, becomes important in this instance when considering its full value. Pseudo-grains have a highly favourable amino-acid spectrum with scarce amino-acids such as lysine (a limiting nutritional factor in traditional grains) present in high quantities.

Pseudo-grains are also high in arginine and histidine, essential for the development of infants and young children. Preliminary results on biofuel research, obtained since 2011, indicate that plant residues from grain amaranth cultivation could become invaluable for bioethanol or bio-diesel

production in South Africa in future. Amaranth grain may also become an important source of squaline, which is currently extracted from shark livers.

Quinoa was recognised for its nutritional and economic potential when it was declared United Nations crop of the year for 2013. Quinoa plants are known for their adaptability and can survive temperatures as low as -8°C (prior to flowering) or tolerate temperatures as high as 38°C . Cultivation can be done at elevations ranging from sea level up to 4 000m above sea level. Recent years have seen rapid global expansion in quinoa production, and cultivation has spread into North America, Europe, Kenya and India.

Production in the traditional quinoa-growing areas of Peru and Bolivia, responsible for 50% of current world output, has increased by 32,4% and 27,5% respectively since 2008. Quinoa shows potential for grain and animal fodder production in areas of limited agricultural potential in South Africa.

Economic benefits and marketing

The introduction of new staple crops could hold many benefits in South Africa, such as diversifying the country's agricultural sector and improving overall food security. However, optimism should be tempered with caution. As yet, no markets other than a limited health niche market exist for pseudo-grains in South Africa. Markets should be developed cautiously, as branding of potential staple food products as health foods may stifle future expansion of pseudo-grain markets.

Production factors such as small grain size (especially with amaranth), lack of chemical pesticide registrations and a large vacuum in general agronomic data will have to be dealt with through intensive research programmes.

Annexure I0: Marketing Plan Templates

I. Marketplace Overview

Define the top three opportunities and the top three threats that could disrupt your business revenue and profit. This includes marketplace trends, changes and competition.

- *How is your business defined?*
- *What segment of the market do your competitors play in?*
- *What trends drive your current growth path?*

II. Market Segmentation

Definition of major market segments and the 'must win' major segments, e.g., consumer. What are the customer needs in each segment and sub-segment? What products and services best suit each segment? What needs are currently not being met?

- *What segments are of highest priority?*
- *What are the needs of decision makers and end users?*
- *What are the gaps from meeting most important needs?*
- *Which of our current products best suit market needs?*
- *What benefits are we offering, what differentiation?*
- *What sub-segments are most important to us?*

III. Business Strategy

Vision, Goals, and Objectives

Define from where increased market participation and profit growth will come. Define the relationship to business goals and objectives. Define how we will focus our budget dollars to achieve X% growth.

- *What is the core market that I compete in?*
- *What are the adjacent markets I compete in?*
- *What are the differences between them?*
- *What rate has our market grown at over the past 3-5 years?*
- *What is the projected growth?*
- *What is our relative market share?*

Business Design Choices

Summarise the key business strategy/choices being made to sustain a competitive advantage, and revenue and profit growth. Define how the execution will take place, demonstrating 'how the play' will be run differently and more effectively to make the revenue and growth targets -- to include acquisition investment strategy and partnerships.

IV. Marketing Plan Elements - Core Elements

A. Product(s)/Offering(s)

What products with which attributes should we offer segments and sub-segments?

B. Strategy and Plan

Define the focus and value proposition of the products/offering to be addressed, and include critical dates that support the strategy.

C. Pricing/Terms

Define the pricing/terms strategy and rationale for this product/offering and critical dates that support the overall strategy.

- *What is our pricing strategy for each sub-segment?*
- *What market segments represent the greatest pricing opportunity?*
- *How will competitors react to price changes?*
- *Who has price leadership?*
- *How price sensitive are the customers, by sub-segment?*
- *What sales and marketing tools and processes support price realization?*

D. Distribution

Strategy and Plan

Define the distribution/channel coverage strategy and critical dates that support the overall strategy. Define the key lead sources, marketing programs for the key channels of distribution and the support system plan and expense targets.

E. Integrated Marketing Communications

Strategy and Plan

Define the integrated marketing communications strategy:

- target audience
- value proposition
- key themes

- messages and campaigns
- critical dates that support the overall strategy

Define the top business unit “big plays” that will be a focus for the year. (This may be optional, if no big plays are planned. If not explain why.)

Marketing Plan Elements -- Operational Elements

A. Support/Skilled Resources

Strategy and Plan

Define the support strategy, i.e., include customer, sales resources, distribution plan, and the key support activities, critical dates and skilled resources needed that support the overall strategy.

B. Fulfilment

Strategy and Plan

Define the fulfilment strategy and key activities and critical dates that support the overall strategy.

V. Risk Assessment

Overall Risk Assessment: Define the prospects for successful implementation; major uncertainties; contingencies; and overall risk to the plan.

Critical Success Factors: Define the key success factors; and critical actions required to achieve the objectives.

VI. Measurement

Establish continuous feedback. Ensure

Annexure I I: Practice Summary/Paraphrasing

Look at the examples of fairly long complicated sentences given here and see if you can separate the main idea from the supporting evidence in each case. Write down what you think the main idea of each sentence is.

1. Dr Tshabala, who is a kind and honourable man who has received much recognition for his excellent service to the community, is currently working at the university.

2. AIDS is a terrible illness which strikes at the immune system of rich and poor alike and has caused the death of millions worldwide in a horrible and tragic manner.

3. All the players in the orchestra, and by this I mean even the most insignificant clasher of cymbals, need to focus their total and undivided attention on the conductor at all times, indeed, for every second of the performance.

4. The successful Farming Institute, which has been conducting classes since the year 2000 and is situated in the Boland with more than a thousand students registered at the moment, is investigating merging with other agricultural educational institutions.

Annexure I2: Graphic Tools to Give Context to Text

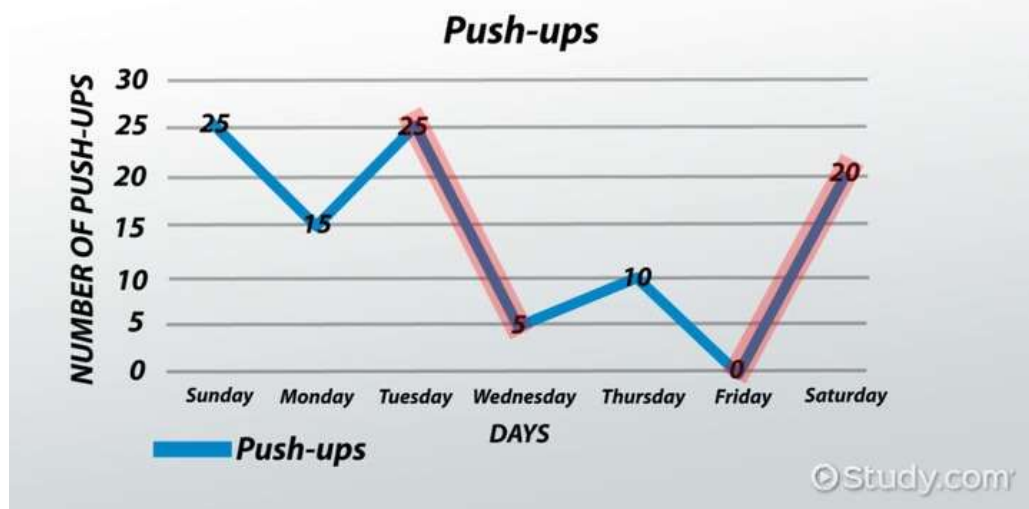
Graphs and The Bar Graph

A bar graph is a graphic representation where vertical or horizontal bars or columns represent some information. The length of the bar tells us the size of the illustrated item. If the numbers in the bar graphs are representing percentages, these must add up to 100%. Bar graphs are sometimes called bar charts or bar diagrams.

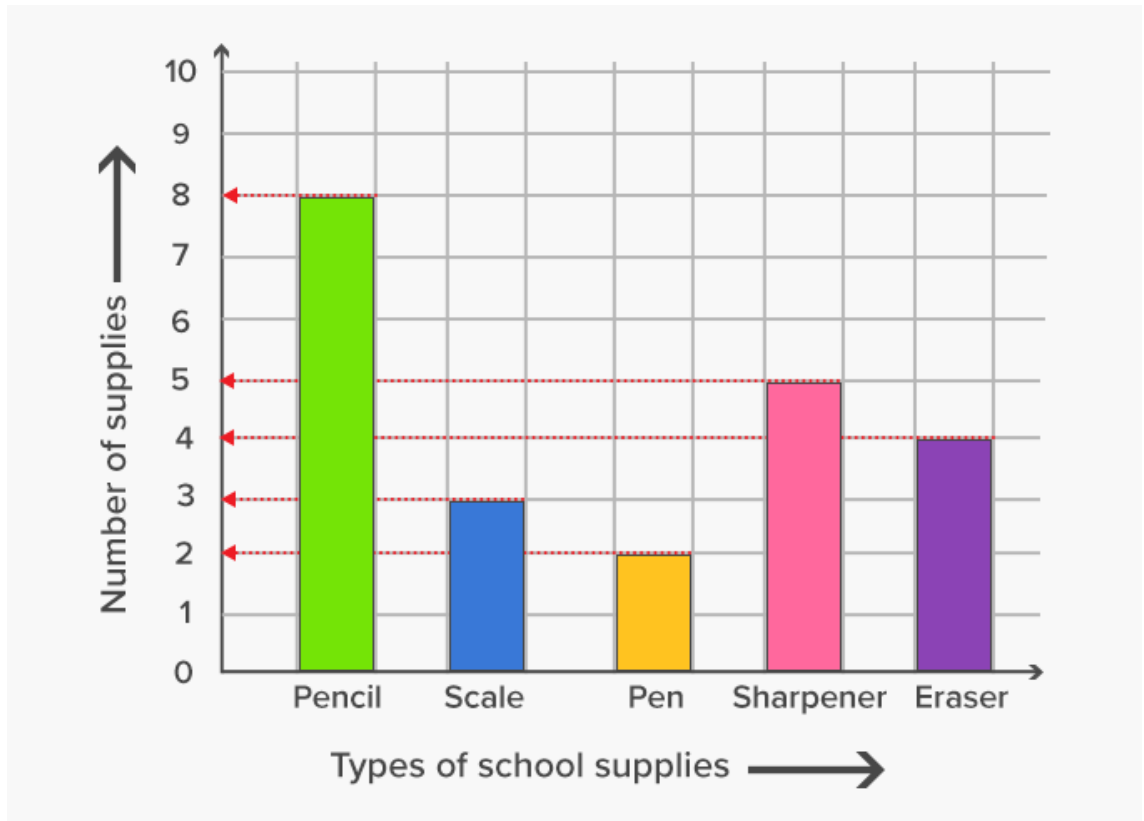
When drawing a bar graph remember the following:-

- Bars should be of equal width;
- There should be spaces of equal width between the bars; • Bars can be vertical or horizontal;
- The bars are usually of different colours to show the difference between the various sets of information;
- Label each bar showing the exact value of each bar.

EXAMPLE OF A LINE GRAPH



Example of a bar graph:



The Pie Chart

A pie chart is a graphic representation of data in the form of a circle or pie, which is divided into wedges. The total of the pie represents 100%. Pie charts are relatively easy to understand and are popular ways of graphically representing numerical data to the public.

Tips for reading pie graphs:

1. Read the title of the pie graph if there is one. It explains what the pie graph is about. Look at the different colours or shadings. This tells you how many parts or sections there are of the whole.
2. Notice the size of each section. Find the biggest and smallest sections.
3. Look for any numbers that give you information about how big or small each section is.

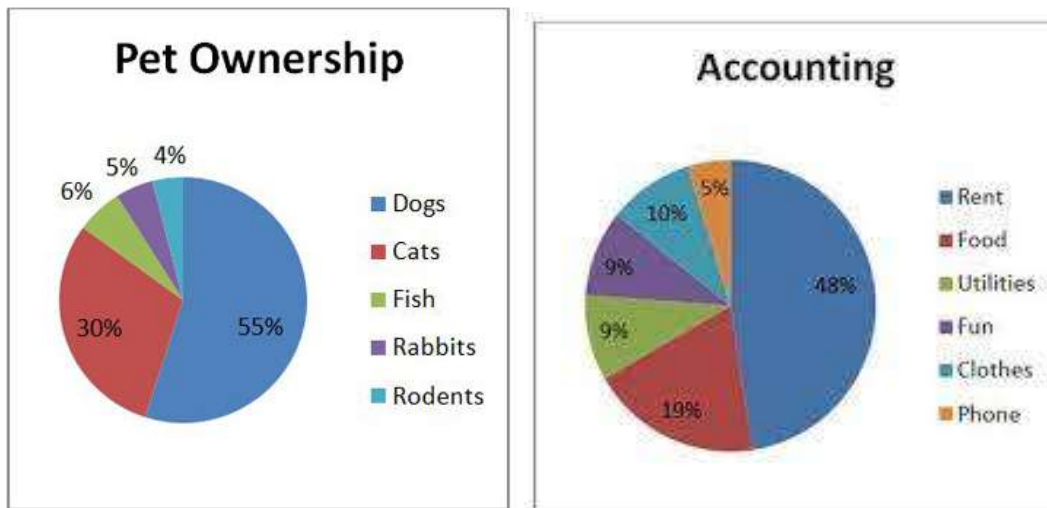


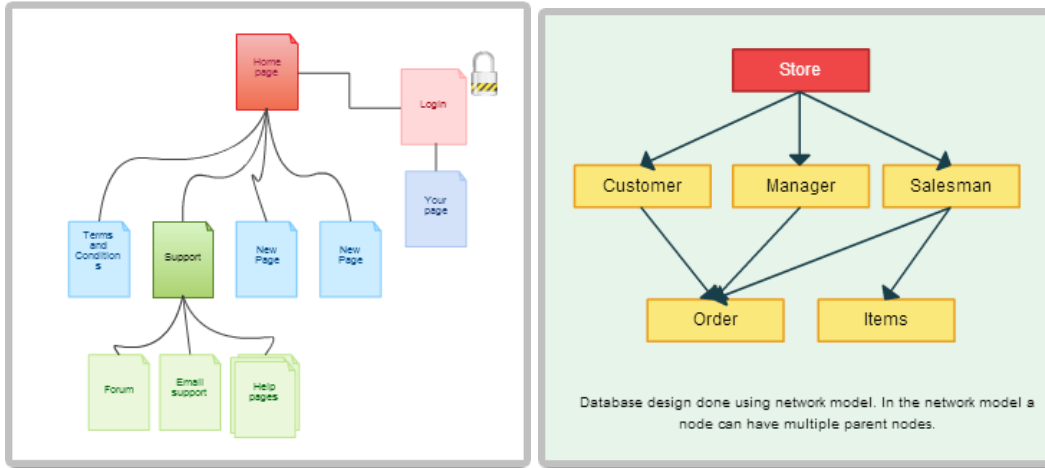
Diagram:

A diagram and a schema can be defined as a simple explanatory drawing; a simple drawing showing the basic shape, layout, or workings of something.

Example of a diagram are:

- a diagram showing the cross-section of a flower;
- a diagram showing the manner in which a piece of machinery should be put together;
- a schema of the layout of a garden;
- a schema of an irrigation system

Diagrams and schema should have all parts clearly labelled. Diagrams often accompany products we buy, for example a video machine will come with a booklet that has diagrams showing us what each piece represents and how it should be used. Textbooks on subjects such as life sciences will often be illustrated with diagrams as will medical books.

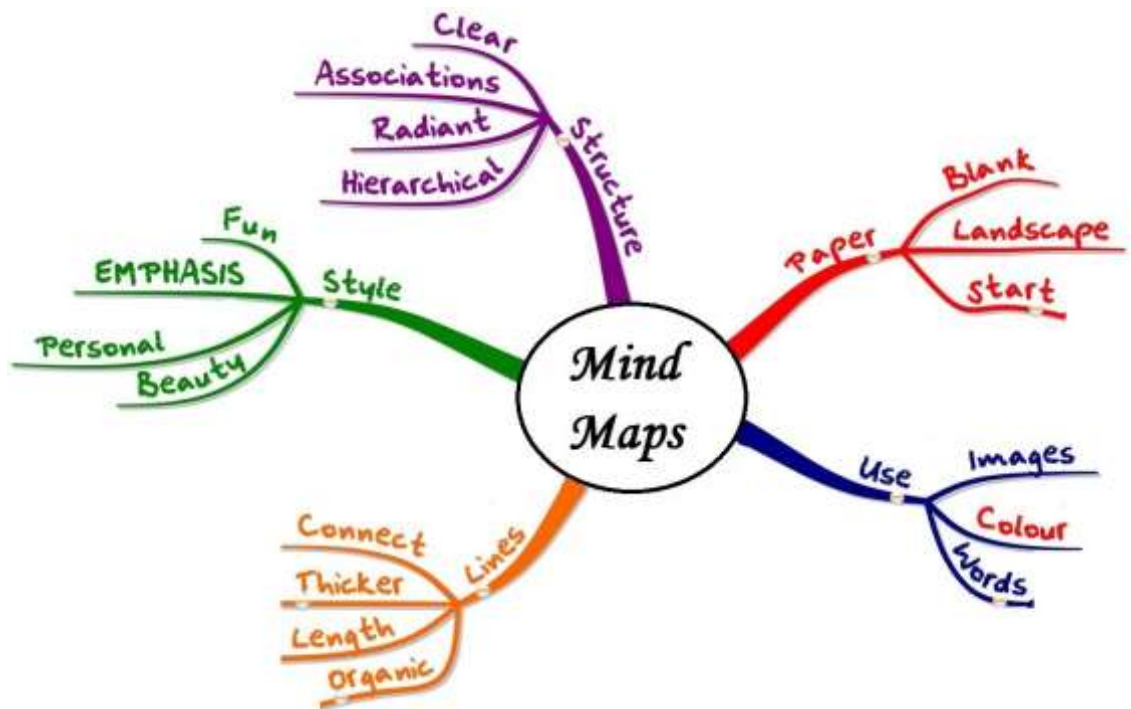


Maps

A map can be defined as a geographical diagram; it is a visual representation that shows all or part of the Earth's surface with geographical features, urban areas, roads, and other details, e.g. "We carefully studied the map of Africa to see exactly where Zanzibar is when we won tickets to go there. It can also be defined as a drawing showing a route or location; a diagrammatical drawing of something such as a route or area made to show the location of a place or how to get there, e.g. "I asked her for a map showing where her house was as I had never been to Bellville before."

Mind maps and brainstorming:

A mind-map is a diagram that shows us graphically how we could think about a particular subject. It is often linked to the process known as brainstorming when you write down all your ideas about a particular topic.



You have been asked to give a talk on 'wearing protective clothing' to your local farming community. This topic should be broken down into key topics. One way of doing this is to create a mind-map.

- In the middle of an A4 page draw a circle and label it "Protective Clothing".
- Now draw "branches" off the circle; In each branch write a word related to protective clothing, e.g., Branch 1 could be labelled "Head gear"; Branch 2 -Trousers; Branch 3 - Tops; Branch 4 - Footwear; Branch 5 – Hand protection.
- Then we could go on to draw smaller branches off the big branch, e.g. off Branch 1 we could have branches labelled helmets, goggles; respirators; off Branch 2 we could have different types of plastic or material for trousers; different designs such as elasticated at the ankle or not; off Branch 3 we could have different materials for tops and designs; off Branch 4 we could have boots, or shoes or softer plastic coverings; off Branch 5 we could have different sorts or gloves such as mittens or hand gloves.

This would give us a good idea of how to write a text on the subject of protective clothing. You could then use your mind-map to illustrate your points as you spoke.

Cartoons:

A cartoon can refer to a sequence of drawings that tell a short story, or are humorous, published in a newspaper or magazine, e.g., the comic strips that appear in the newspaper are done in cartoon form; cartoon versions of written texts such as "The Tale of Two Cities" in cartoon form.

It can also refer to a satirical drawing or a humorous drawing published in a newspaper or magazine and commenting on a current event or theme.

Cartoons are used to lighten the mood of a text or to make a serious point in a humorous way.

Annexure 13: Business Letter

Your own address blocked against the right side / letterhead (Skip a line between addresses, dates, greetings, paragraphs, complimentary close and signature)	ITO Focus P O Box 13150 Clubview 0014
Date also blocked against the right side	1 April 2003
The address of the recipient blocked against the left side	The Managing Director XYZ Organisation (Pty) Ltd P O Box 1234 Johannesburg 2000
Greeting	Dear Sir or Dear Martin or Dear Mr Modise
Topic line or subject heading	One phrase which is the focus of the letter
Introduction	Perhaps two sentences stating the purpose of the communication
Body of the letter <i>Remember:</i> Audience Purpose Style Tone Structure of paragraphs and sentences Grammar Punctuation	Not less than two sentences per paragraph, each containing one main idea and some supporting ideas
Conclusion	Similar to the introduction
Complimentary close	Yours faithfully if you used Dear Sir at the top

	Your sincerely if you used Dear Martin or Mr Mabuthile Never 'Yours truly'
Your signature	
Your name	Your initial and name. If you are a female write Ms, Miss or Mrs. Ms is used by any woman who does not feel that her marital status is something that needs to be communicated
Your position in the company	Director, Head of Department

Annexure I4: Quality Control Checklist

Quality Control Checklist	YES	NO
Is the layout pleasing to the eye? i.e., no awkward page breaks, no excessive blank space and pages aren't crowded.		
Is the overall format consistent?		
Are the pages numbered sequentially?		
Are the headers and footers free of typographical errors and consistent?		
Are the boldface, italics, colour and other text appearance variables used consistently?		
Are the fonts and font sizes consistent?		
Is text alignment consistent?		
Is the cross referencing accurate? e.g., references to other sections, tables, graphics, pages or publications		
Are sentences and phrases punctuated correctly (including items in lists, tables, and graphics)		
Has spelling been checked manually or with a computerised spell checker?		
Are words capitalised appropriately (e.g., proper nouns and labels in tables and graphics)		
Is it the correct grammar and usage?		
Are words hyphenated correctly according to usage? (i.e., compound words, compound modifiers or prefixes)		
Are abbreviations, acronyms and signs and symbols used accurately and consistently?		

Are terms used consistently? (e.g., facility may not mean the same thing as site in certain contexts)		
Is the title and heading case (i.e., uppercase, lowercase or mixed upper/lower) correct?		
Are numbers used consistently? (i.e., spelled out vs. figures)		
Are sequences numbered or lettered in order? (e.g., lists, equations, footnotes, tables and graphics)		
Is it the correct Maths? (e.g., totals in a table)		
Are trademarks capitalised or otherwise appropriately designated?		
Is the organisation logical and parallel on the sentence, paragraph and section levels?		
Do the headings accurately reflect the text and are they tailored to readers' needs?		
Is the language clear, concise, and readable? (e.g., transitions are used, paragraphs discuss a single topic, reading level is appropriate for the audience)		
Is the vocabulary appropriate to the content?		
Are redundancies eliminated? (e.g., ideas and facts are not repeated as in data presented in both text and a table)		
Are examples used to explain complex material?		
Do graphics clearly illustrate text and are unnecessary elements deleted?		
Are tables and graphics labelled appropriately and parallel with text?		
Are ideas consistent with no contradictions?		
Is potentially derogatory or unsubstantiated language removed?		

Has the planning and drafting improved its suitability for the intended purpose and audience?		
Has the editing and redrafting of a text improved its suitability for the intended purpose and audience?		
Have cohesive devices linked parts of texts with other parts?		
Are ideas linked and adapted to promote overall coherence of the text?		
Have changes to grammatical errors improved the structure and readability of text?		
Have the spelling, punctuation, register/tone, sentence and paragraph structures been checked and corrected?		
Have points of view been supported with a simple range of reasons and facts?		
Have references used in writing been acknowledged and accurately recorded in the appropriate format?		