Citrus Orchard Foreman Occupational Learning

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Study Guide

KM-08:
Farm Business Management and Farming Process Management

Qualification:	110667 – Occupational Certificate: Orchard and Vineyard Foreman		
Module No.:	611202001-KM-08		
Module Title:	Farm Business Management and Farming Process Management		
NQF Level:	4	**Credits:**	8

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Qualification Information

The content of this study guide is aligned to the following occupational qualification:

SAQA QUAL ID	**Qualification Title**			
110667	Occupational Certificate: Orchard and Vineyard Foreman			
Originator				
Development Quality Partner – AgriSETA				
Primary Or Delegated Quality Assurance Functionary		**NQF Sub-Framework**		
-		OQSF - Occupational Qualifications Sub-Framework		
QUALIFICATION TYPE	**FIELD**		**SUBFIELD**	
Occupational Certificate	Field 01 - Agriculture and Nature Conservation		Primary Agriculture	
Abet Band	**Minimum Credits**	**Pre-2009 NQF Level**	**NQF Level**	**Qual Class**
Undefined	147	Not Applicable	NQF Level 04	Regular-ELOAC

Knowledge Module

The content of this learner guide is aligned to the following module of the occupational qualification above.

Module Code	Module Title	Level	Credits
611202-001-00-KM-01	Plant Structure and Physiology	4	5
611202-001-00-KM-02	Vineyard or Orchard Establishment	3	2
611202-001-00-KM-03	Vineyard or Orchard Manipulation Processes	3	8
611202-001-00-KM-04	Harvesting	3	4
611202-001-00-KM-05	Basic Principles of Plant Nutrition	4	4
611202-001-00-KM-06	Crop Protection	3	3
611202-001-00-KM-07	Assets in Horticultural Production	3	2
611202-001-00-KM-08	Farm Business Management and Farming Process Management	4	8
611202-001-00-KM-09	Human Resource Management and Processes	4	8
611202-001-00-KM-10	Overseeing Farming Resource Utilisation	4	8
Practical Skill Modules			
611202-001-00-PM-01	Organise, Allocate and Monitor Availability and Productive Use of Resources	4	5
611202-001-00-PM-2a	Set Team and Individual Performance Goals to Enhancing Team Performance	4	10
611202-001-00-PM-2b	Control Vineyard or Orchard Practices	4	10
611202-001-00-PM-03	Supply Accurate Daily Orchard or Vineyard and Production Information	4	10

Knowledge Topics, Topic Elements, and IACs

The content of this study guide is aligned to the following knowledge topics, topic elements, and internal assessment criteria of the module above.

Knowledge Topics, Topic Elements, and IACs	
Code	**Title**
KM-08-KT01	**The horticultural farm as a business (17%, 1.36 credits)**
KT0101	Concepts of sustainability, globalisation and competition in the farming sector
IAC0101	The types of legal entities are listed and the advantages and disadvantages in terms of the horticultural enterprise are named
IAC0102	The concept of sustainability in the horticultural sector is defined and argued
IAC0103	The concept of competition in the horticultural sector is defined and discussed
KM-08-KT02	**Structure of the horticultural industry (17%, 1.36 credits)**
KT0201	Various sectors and production systems
KT0202	Accreditation requirements
IAC0201	Various sectors in the horticultural industry are identified and discussed
IAC0202	Various production systems (such as organic foods) are listed and defined
IAC0203	The typical horticultural production value chain and process flow components are identified and explained
IAC0204	The concept of competitiveness is defined and the importance thereof is justified
IAC0205	Accreditation systems such as Global GAP (Good Agricultural Practice) are listed and the impact thereof on production processes and activities is described
IAC0206	Traceability is defined as a component of accreditation systems and the impact thereof on production practices is evaluated
KM-08-KT03	**Markets for horticultural produce (17%, 1.36 credits)**
KT0301	Markets, market channels and segments
KT0302	Market preferences and standards
IAC0301	Industry marketing channels are identified and explained
IAC0302	Market segments (e.g. export, local, processing) are identified and the characteristics of each are evaluated
IAC0303	Specific markets (e.g. EU, Japan, USA, supermarkets, processing) are identified and compared in principle
IAC0304	The impact of market preferences on production processes and production decisions are analysed
IAC0305	Market standards and requirements for food safety and quality are argued
IAC0306	The impact of customer requirements on production decisions is analysed
KM-08-KT04	**General farming business management (17%, 1.36 credits)**
KT0401	General business management concepts and principles
IAC0401	Basic financial principles related to viable business practices such as input costs, profit/loss and income are defined and explained as it pertains to horticultural production
IAC0402	The management concepts and basic principles of planning, organising, leading and controlling are defined within the horticultural farming context
IAC0403	The concepts and basic principles of decision making, problem solving, motivation, delegation are defined and evaluated as it pertains to horticultural production
IAC0404	The concepts and basic principles of planning and scheduling (PERT chart) are defined and evaluated as it pertains to horticultural production

IAC0405	The concepts and basic principles of continuous improvement are defined and evaluated as it pertains to horticultural production
IAC0406	Reasons for and procedures for effective meetings are justified
IAC0407	Farm systems are defined and the component thereof is listed
IAC0408	The role of farm systems in effective management of the farm is explained
KM-08-KT05	**Farm management information systems (16%, 1.28 credits)**
KT0501	Agricultural data, information and knowledge management concepts and principles
IAC0501	Data, information and knowledge management concepts are defined in terms of their role in horticultural production
IAC0502	The importance of documenting data and information is argued
IAC0503	Historical information on orchard production and environmental conditions and the uses thereof are discussed
IAC0504	The purpose of environmental information and the impact thereof on activities and production targets and decision making processes are evaluated
IAC0505	Internal and external records and reporting structures are identified and discussed
IAC0506	The purpose and methods of collection and analysis of agricultural data is justified and applied
IAC0507	The collection and recordkeeping of agricultural data is described and motivated
IAC0508	Methods of report writing and presentations are applied
KM-08-KT06	**Farm renewal strategy (16%, 1.28 credits)**
KT0601	New vineyards/ orchards to be established
KT0602	Replacement
IAC0601	The aspects to be considered in the establishment of new orchards/vineyards are evaluated in terms of their impact on farm renewal
IAC0602	The decision-making criteria in the farm renewal strategy are identified
IAC0603	Planning and costing aspects related to the establishment of new orchards/vineyards are discussed
IAC0604	Methods and operations to be applied in the establishment of new orchards/vineyards are discussed
IAC0605	The aspects to be considered in the replacement of orchards/vineyards are evaluated
IAC0606	Planning and costing aspects related to the replacement of orchards/vineyards are discussed
IAC0607	Methods and operations to be applied in the replacement of orchards/vineyards are discussed

KM-08-KT01: The Horticultural Farm as a Business (17%, 1.36 credits)

Topic Elements

The content of this chapter covers the following topic elements:

- KT0101: Concepts of sustainability, globalisation and competition in the farming sector

1. KT0101: Concepts of Sustainability, Globalisation and Competition in the Farming Sector

IAC0101: The types of legal entities are listed and the advantages and disadvantages in terms of the horticultural enterprise are named

- In South Africa, there are several different types of businesses (legal entities) that growers can register their farms as.
- Each business structure has different requirements and implications for taxation, liability and succession.
- Other than a sole proprietorship, all other business types need to be registered with the Companies and Intellectual Property Commission (CIPC).
- The most common types of businesses in South Africa are sole proprietorships, partnerships and private companies.
- When choosing a business type, producers should ensure that they have a clear business plan, details of the partnership should they choose a partnership, the name of the business, whether it is for profit or not for profit and the tax implications.
- The following types of businesses are available for registration in South Africa:
  - Sole proprietorship.
  - Partnership.
  - Private company.
  - Public company.
  - Non-profit.
  - Close corporation.
  - Personal liability company.
  - State-owned company.
- It is recommended that producers consult an expert such as an accountant or lawyer before making their final decision on what legal entity to choose.

- Each of the various types of businesses have their own advantages and disadvantages.:

Legal Entity	Advantages	Disadvantages
Sole Proprietorship	➢ Easy and inexpensive to establish, which suits a small or emerging citrus farmer. ➢ Farmer has full control over farming, harvesting, and marketing decisions without consulting others. ➢ All profits belong to the owner, which supports reinvestment.	➢ Farmer has unlimited personal liability, meaning personal assets are at risk if the citrus enterprise incurs debt or crop losses. ➢ Difficult to raise large amounts of capital for orchard expansion or export infrastructure. ➢ Business may struggle to continue if the owner becomes unable to work.
Partnership	➢ Allows citrus farmers to pool capital, skills, and labour to improve production. ➢ Workloads such can be shared. ➢ Relatively easy and inexpensive to establish.	➢ Partners have joint and several liability, meaning one partner's mistakes can financially affect all partners. ➢ Disagreements between partners can disrupt long-term planning. ➢ Partnership may dissolve if a partner leaves or dies unless otherwise agreed.
Private Company (Pty) Ltd	➢ Offers limited liability, protecting the farmer's personal assets from business risks. ➢ Strong credibility with banks, exporters, and international citrus buyers. ➢ Ownership can continue even if shareholders change, ensuring long-term farm stability.	➢ Higher registration, accounting, and compliance costs. ➢ Must comply with Companies Act requirements, which increases administrative work. ➢ Profits are taxed at the corporate tax rate, which may be higher than personal tax in some cases.
Public Company (Ltd)	➢ Able to raise large amounts of capital by selling shares to the public. ➢ High credibility and visibility, which may support large-scale citrus operations and exports. ➢ Ownership is easily transferable through shares.	➢ Very high regulatory and reporting requirements. ➢ Decision-making can be slow. ➢ Expensive and impractical for most individual citrus farmers.
Non-Profit Company (NPC)	➢ Suitable for citrus research, training, or community development projects. ➢ May qualify for grants or donor funding to support emerging citrus growers. ➢ Profits are reinvested into the organisation's objectives rather than distributed.	➢ Profits cannot be distributed to owners, making it unsuitable for commercial citrus farming. ➢ Organisation depends on donations or grants, which may be unreliable. ➢ Cannot focus on profit maximisation, which limits business growth.
Close Corporation (CC)	➢ Provides limited liability with simpler administration than a company. ➢ Suitable for small to medium-sized citrus farming operations. ➢ Members are actively involved in managing the farm.	➢ No new close corporations can be registered in South Africa. ➢ Limited ability to raise capital compared to companies. ➢ Growth and succession options are restricted.
Personal Liability Company (Inc.)	➢ Allows professional managers or directors to be held accountable for their actions.	➢ Directors are personally liable for company debts, which increases financial risk.

Legal Entity	Advantages	Disadvantages
	➢ May be useful where specialist agricultural or export expertise is required. ➢ The company has a separate legal identity.	➢ Uncommon and unsuitable for most citrus farming enterprises. ➢ Does not protect personal assets as effectively as a private company.
State-Owned Company (SOC)	➢ May receive government funding or support. ➢ Able to support national citrus development, research, or export infrastructure. ➢ May promote job creation and regional agricultural growth.	➢ Not privately owned, so individual farmers have little control. ➢ Political influence and bureaucracy can delay decision-making. ➢ Not suitable for privately owned citrus farms.

Table 1: Advantages and Disadvantages of Legal Entities

IAC0102: The concept of sustainability in the horticultural sector is defined and argued

- Citrus farming, as with all types of farming, changes the environment it takes place in.
- Introducing one species of plant (citrus trees) and letting them dominate an area changes the ecosystem around the farm.
- Farming for a long time in an environmentally friendly way requires farmers to think about sustainability.
- Sustainability is the practice of avoiding the depletion of natural resources to maintain ecological balance.
- In farming, sustainability refers to producing fruit in a way that does not damage the environment to the point where farming is no longer possible there.
- Farms can only produce fruit if the surrounding environment and ecosystem are healthy, and it is the farmer's responsibility to make sure they stay that way.
- The most common ways that irresponsible farming damages the ecosystem is through:
  - Poor soil management.
  - Poor water management.
  - Poor waste management.
  - Loss of biodiversity.
  - Excessive or poorly managed chemical use.

IAC0103: The concept of competition in the horticultural sector is defined and discussed

- In the farming business, competition and competitiveness both refer to a farm's ability to get more sales than other farms.
- Farming is only successful if farmers can sell their product in a large, global market, filled with thousands of other competitors.
- Competing on this market involves:
  - Offering the best product possible.
  - Charging the best price possible (for both growers and customers).

- Offering the best product possible involves maximising fruit quality and yield.
- Charging the best price possible involves managing production to minimise costs and maximise profits.

self-assessment

KT0101: Concepts of Sustainability, Globalisation and Competition in the Farming Sector

Can I?	Y/N
Can I list the various legal entities available for registration in South Africa?	
Can I describe the advantages and disadvantages of the various legal entities?	
Can I describe the effects of farming on the surrounding environment?	
Can I define sustainability?	
Can I list common ways that irresponsible farming damages ecosystems?	
Can I define competition and competitiveness?	
Can I compete effectively on the farming market?	

work scenario reference

To learn about how the above information is applied in practice, please look at the following workplace scenarios:

IAC Code	IAC Title	Relevant Work Scenario(s)
IAC0101	The types of legal entities are listed and the advantages and disadvantages in terms of the horticultural enterprise are named	A1, A2, A6, I1, L1
IAC0102	The concept of sustainability in the horticultural sector is defined and argued	A1, A2, J1, J2, L1
IAC0103	The concept of competition in the horticultural sector is defined and discussed	A1, A2, A3, A6, A7

KM-08-KT02: Structure of the Horticultural Industry (17%, 1.36 credits)

Topic Elements

The content of this chapter covers the following topic elements:

- KT0201: Various sectors and production systems
- KT0202: Accreditation requirements

1. KT0201: Various Sectors and Production Systems

IAC0201: Various sectors in the horticultural industry are identified and discussed

- Citrus farming is only successful if farmers can produce and sell the highest possible yield of fruit for the best possible price.
- Farmers can only achieve this through understanding the various sectors of the citrus industry that they can produce for.
- These various sectors include:
  - Export.
  - Domestic.
  - Processing.
- Citrus is exported from South Africa to more than 100 countries around the world, and South Africa is the second largest exporter of citrus in the world.
- South African citrus is exported all over the world, and a wide variety of citrus is exported.
- Although only around two thirds of citrus produced in South Africa is exported, it generates 90% of income for the industry.
- Export is by far the most profitable way to sell citrus fruit, and many farms would not be profitable without exporting.
- Various export markets differ in terms of:
  - Tariffs.
  - Supply conditions.
  - Regulations.
  - Product diversity.
  - Sanitary and phytosanitary requirements.
  - Environmental considerations.

- Social considerations.

- These conditions will determine if the specific trading conditions in a market will suit a certain grower.
- Export fruit has the highest demands in terms of fruit quality, regulations, and admin involved, especially when it comes to international shipping and logistics.
- If growers choose to export your fruit, it is recommended that they work with an export agent or other market professional.
- Citrus that does not achieve the quality level required of export fruit can be sold on the domestic markets, within South Africa.
- Domestic markets include:
  - The fresh produce markets.
  - The bakkie trade.
  - Other informal markets.
  - Government feeding schemes.
  - Local supermarket programmes.
- Selling on the domestic market is less risky than exporting, as there are less regulations involved and the standards are more forgiving.
- Conversely, the earnings on the domestic market are considerably lower than those on the export market.
- The processing sector refers to fruit sold and used to manufacture a variety of citrus derived products.
- These derivative products include:
  - Fruit juices.
  - Concentrates.
  - Oils.
- Processing products are used in a variety of industries and markets, including:
  - Food and drink.
  - Cosmetics.
  - Medicine.
  - Manufacturing.
- Most processing fruit is often fruit that was unsuitable for sale as fresh fruit on the domestic or export market.
- Some growers produce fruit purely for the processing market.
- Producing fruit for processing is significantly less risky and capital-intensive, though the returns are lower than both the export and domestic fresh fruit markets.

IAC0202: Various production systems (such as organic foods) are listed and defined

- There are various production systems available to farmers, and the choice of production system is determined by production goals and target markets.

- Common production systems include:
  - Subsistence.
  - Semi-intensive and mixed produce farming.
  - Intensive and highly industrialised.
  - Organic.
- Subsistence farming aims to produce all or almost all the goods required by family running the farm, usually without any significant surplus for sale.
- Subsistence farming for fruit is very uncommon, as it is usually focused on growing vegetables or grains.
- Semi-intensive and mixed produce farming involves mixing fruit production with other cash crops to provide a more sustainable cashflow.
- Smaller fruit producers commonly use semi-intensive and mixed produce farming systems.
- Intensive and highly industrialised production uses sophisticated production methods, and dependent on a sophisticated supply chain infrastructure to market.
- Intensive and highly industrialised production is the main form of production for the large fruit export growers of South Africa.
- Organic farming is a method of agricultural production that excludes the use of synthetic substances and genetically modified organisms.
- Organic farming is not really possible for export production due to stringent phytosanitary controls and the need for high levels of production.

IAC0203: The typical horticultural production value chain and process flow components are identified and explained

- The value chain, in terms of citrus production and export, refers to the chain of events that must take place to bring citrus to the market overseas.
- The process is referred to as a value chain because growers must make sure that the fruit maintains its value throughout the journey.
- Value refers to the benefit that a consumer can expect for something, normally measured in money.
- Value is not set by the cost of producing it but rather set in the mind of the customer, and if that customer does not think it is worth the money, the product has very little value.
- The value chain consists of multiple 'links' which are the steps in the process.
- The particular links in each producer's value chain will be different, as particular production and logistics practices will differ between producers.
- A standard value chain will usually (but not necessarily) include the following links:
  1. Link 1 - Production
  2. Link 2 - Picking
  3. Link 3 - Packing
  4. Link 4 – Transport
  5. Link 5 – Harbour Handling

6. Link 6 - Shipping
7. Link 7 – Receiving and Transport
8. Link 8 – Sales

IAC0204: The concept of competitiveness is defined and the importance thereof is justified

Refer to IAC0103: The concept of competition in the horticultural sector is defined and discussed.

self-assessment

KT0201: Various Sectors and Production Systems

Can I?	Y/N
Can I describe how to make citrus farming successful?	
Can I describe and differentiate between the various market sectors for citrus farming?	
Can I describe the advantages and disadvantages of each of the market sectors?	
Can I select a suitable market sector?	
Can I select a suitable export market?	
Can I select a suitable domestic market?	
Can I select a suitable processing market?	
Can I describe the various production systems available to citrus farmers?	
Can I select an appropriate production system?	
Can I define value and the value chain?	
Can I describe the importance of the value chain?	
Can I list the common links in a value chain?	

work scenario reference

To learn about how the above information is applied in practice, please look at the following workplace scenarios:

IAC Code	IAC Title	Relevant Work Scenario(s)
IAC0201	Various sectors in the horticultural industry are identified and discussed	A1, A2, A6, A7, A8
IAC0202	Various production systems (such as organic foods) are listed and defined	A1, A2, A6, A7, B1
IAC0203	The typical horticultural production value chain and process flow components are identified and explained	A1, A4, A6, A7, A8
IAC0204	The concept of competitiveness is defined and the importance thereof is justified	A1, A2, A3, A6, A7

2. KT0202: Accreditation Requirements

IAC0205: Accreditation systems such as Global GAP (Good Agricultural Practice) are listed and the impact thereof on production processes and activities is described

- There are various additional certification and special private accreditation schemes outside of government standards and requirements that growers may prescribe to.
- The standards of these accreditation systems may be over and above the minimum standards of governments or other regulatory bodies.
- These systems prescribe standards and rules for the purchasing, production, and export of citrus plants and fruit.
- The most common accreditation systems for citrus farmers are:
  - GlobalGAP.
  - BRC global standard.
  - SIZA.
- The most important accreditation system is GlobalGAP, a private sector body that sets voluntary standards for the certification of agricultural products around the globe.
- GlobalGAP sets out a framework for Good Agricultural Practices (GAP) on farms and defines essential elements for development of best agricultural practice.
- Registration for GAP, of which GlobalGAP is the most important, is a requirement for entry into most fruit markets.
- The BRC Global Standard was developed by the British Retail Consortium (BRC) and is a benchmark for packing quality and safety.
- SIZA (The Sustainability Initiative of South Africa) is a non-profit company that helps South African agriculture comply with ethical and environmental standards.
- SIZA offers audits, capacity building, best practice programmes, and a digital platform for members and stakeholders.

IAC0206: Traceability is defined as a component of accreditation systems and the impact thereof on production practices is evaluated

- Traceability systems help growers and production managers to isolate the source and extent of safety or quality control problems.
- The definition of traceability is necessarily broad because food is a complex product and traceability is a tool for achieving a number of different objectives.
- It is necessary to determine the breadth, depth, and precision of a traceability system, depending on the characteristics of the production process and the traceability requirements.
- The breadth of a traceability system relates to the amount of information collected by the system related to a specific product.
- The depth of a traceability system relates to how far back or forward the system tracks the relevant information.
- The precision of a traceability system reflects the degree of assurance with which the tracing system can pinpoint a particular product's movement or characteristics.

- Traceability is multi-disciplinary because many departments (sections) of an organisation are involved in its development and implementation.
- Once the right team has been assembled, it is necessary to determine the scope of the traceability system to meet the specific purpose of your organisation.
- Most traceability systems that are commercially available in South Africa are based on internationally accepted methods of identifying products, consignments, containers, and locations.
- The GS1 standard, which evolved from the EAN.UCC standard, is the most commonly used standard globally.
- Radio frequency identification (RFID) is a growing technology that utilises radio frequencies to identify products, pallets, consignments etc., throughout the supply chain.
- The implementation of a traceability system requires upfront investment, and therefore organisations are advised to take all costs (risks) and benefits into consideration, which requires a cost / benefit analysis.
- Two further considerations that must be given attention before implementing the internal traceability system are planning and identifying a driver for the process.
- To reduce the impact of the implementation process on the day-to-day activities of the operation, a clear step-by-step plan should be developed well in advance.
- Since an internal traceability system affects many sections of a business, as discussed above, it is important to identify a single person that will take responsibility for the implementation process.
- Many buyers now require their suppliers to verify, often through third-party certification, that their internal traceability systems work effectively.
- Traceability is also a legal requirement in terms of South Africa's food safety laws and it is therefore incorporated into the various checklists used by the officially assigned body to conduct audits.
- For external traceability, the main requirements for handling withdrawals and recalls across the supply chain is having reliable data, data exchange capability, and properly mapped business processes.

self-assessment

KT0202: Accreditation Requirements

Can I?	Y/N
Can I describe the purpose of accreditation systems?	
Can I list common accreditation systems for citrus farmers?	
Can I describe the standards set by accreditation systems?	
Can I apply the standards of GlobalGAP?	
Can I define the concept of traceability?	
Can I manage and implement traceability systems?	

work scenario reference

To learn about how the above information is applied in practice, please look at the following workplace scenarios:

IAC Code	IAC Title	Relevant Work Scenario(s)
IAC0205	Accreditation systems such as Global GAP (Good Agricultural Practice) are listed and the impact thereof on production processes and activities is described	A4, A5, A6, A7, L1
IAC0206	Traceability is defined as a component of accreditation systems and the impact thereof on production practices is evaluated	A4, A5, A6, A7, A8

KM-08-KT03:
Markets for Horticultural Produce
(17%, 1.36 credits)

Topic Elements

The content of this chapter covers the following topic elements:

- KT0301: Markets, market channels and segments
- KT0302: Market preferences and standards

1. KT0301: Markets, Market Channels and Segments

IAC0301: Industry marketing channels are identified and explained

Refer to IAC0201: Various sectors in the horticultural industry are identified and discussed.

IAC0302: Market segments (e.g. export, local, processing) are identified and the characteristics of each are evaluated

Refer to IAC0201: Various sectors in the horticultural industry are identified and discussed.

IAC0303: Specific markets (e.g. EU, Japan, USA, supermarkets, processing) are identified and compared in principle

Refer to IAC0201: Various sectors in the horticultural industry are identified and discussed.

work scenario reference

To learn about how the above information is applied in practice, please look at the following workplace scenarios:

IAC Code	IAC Title	Relevant Work Scenario(s)
IAC0301	Industry marketing channels are identified and explained	A1, A2, A6, A7, A8
IAC0302	Market segments (e.g. export, local, processing) are identified and the characteristics of each are evaluated	A1, A2, A6, A7, A8
IAC0303	Specific markets (e.g. EU, Japan, USA, supermarkets, processing) are identified and compared in principle	A1, A2, A6, A7, A8

2. KT0302: Market Preferences and Standards

IAC0304: The impact of market preferences on production processes and production decisions are analysed

- Citrus markets are diverse, with the various citrus varieties each having their own unique consumer base and preferences.
- Market demand changes based on factors including:
  - Consumer taste trends.
  - Health considerations.
  - Trade agreements.
- Market preferences for specific fruit qualities involve preferences for:
  - Size.
  - Quality.
  - Flavour.
  - Appearance.
- Cultivars are selected to meet these market demands based on their suitability for a chosen rootstock.
- Market demand extends beyond fruit preferences to include considerations such as:
  - Organic production.
  - Sustainability.
  - Ethical farming practices.
- Some consumers, especially those in wealthier countries, are willing to pay a high price for citrus fruits produced using environmentally friendly methods or under specific certifications.
- Producing fruit to suit certain markets involves changing production practices, such as by:
  - Adjusting chemical usage to meet regulatory requirements.
  - Changing production systems.
  - Using different production practices.
  - Increasing or decreasing yield goals.
  - Investing in new infrastructure.

IAC0305: Market standards and requirements for food safety and quality are argued

- The South African citrus industry is export oriented, with about 60% of our commercially grown citrus being exported as fresh fruit.
- Production practices are geared toward maximising the export crop by ensuring that the requirements of foreign consumers are met.
- The most important factors that determine which market is targeted by a grower are citrus types and cultivars, production volumes, commercial certification, external and

internal fruit quality, and local pest and disease pressure and phytosanitary market requirements.

- For food safety there are both legal and commercial minimum requirements. Examples of commercial requirements are GlobalGAP and Nature's Choice.
- Once a market has been identified as a possible target market, it is essential that the grower researches all the requirements of the market and adjust production and handling practices accordingly.
- It can be beneficial for growers in an area to share their knowledge of export markets and cooperate in the implementation of production practices that meet the requirements of those markets.
- Once all the necessary plans and strategies have been designed and implemented, ongoing management is vital to ensure that standards are maintained.
- Every person that comes into contact with export citrus in the production cycle must be aware of food safety and quality standards.

IAC0306: The impact of customer requirements on production decisions is analysed

Refer to IAC0304: The impact of market preferences on production processes and production decisions are analysed.

self-assessment

KT0302: Market Preferences and Standards

Can I?	Y/N
Can I describe the factors that change market demand?	
Can I list the market preferences of consumers?	
Can I change production practices to suit certain markets?	
Can I list the factors that determine the suitable target market for a grower?	
Can I select a suitable target market?	

work scenario reference

To learn about how the above information is applied in practice, please look at the following workplace scenarios:

IAC Code	IAC Title	Relevant Work Scenario(s)
IAC0304	The impact of market preferences on production processes and production decisions are analysed	A4, A5, A6, A7, A8
IAC0305	Market standards and requirements for food safety and quality are argued	A4, A5, A6, A7, A8
IAC0306	The impact of customer requirements on production decisions is analysed	A4, A5, A6, A7, A8

KM-08-KT04: General Farming Business Management (17%, 1.36 credits)

Topic Elements

The content of this chapter covers the following topic elements:

- KT0401: General business management concepts and principles

1. KT0401: General Business Management Concepts and Principles

IAC0401: Basic financial principles related to viable business practices such as input costs, profit/loss and income are defined and explained as it pertains to horticultural production

- Managing the financial side of a farm involves understanding various financial principles, including:
  - Costs (including input costs).
  - Profit and loss.
  - Income.
- Costs include anything the farm has to spend money on, including inputs, labour, equipment, and infrastructure, among others.
- Inputs refer to the resources which are converted into the final product through using equipment and infrastructure.
- Costs can either be categorised by dividing them into variable and fixed costs, or into direct and indirect (overhead) costs.
- Variable and fixed costs are differentiated by whether the cost must be paid regularly or not.
- Fixed costs are those costs that are constant and have to be paid regularly, although their value may change over time.
- Examples of fixed costs include rent, water, etc.
- Variable costs are those that may or may not be needed to be paid depending on the time of year and what is happening on the farm.
- Examples of variable costs include agrochemicals, fuel, etc.
- Some costs are difficult to classify, such as employee payment.
- Salaries are considered a fixed cost, but wages paid to seasonal workers are considered a variable cost.

- Electricity is also difficult to categorise, as the amount paid for electricity can vary significantly, but electricity is still considered a fixed cost because it has to be paid every month.
- Because variable costs depend on the farming activities and therefore depend on the production plans, they can be controlled in the short term through good planning.
- Variable costs can also usually be allocated to particular production units on the farm.
- Direct and indirect costs are differentiated by their relation to production of the final citrus crop.
- Indirect, or overhead, costs are those which cannot be directly linked to the production of the crop that the farm sells.
- Examples of indirect costs include:
  - Rent.
  - Water and electricity.
  - Infrastructure maintenance.
  - Insurance.
  - Administration and management salaries.
  - Stationery.
  - Levies.
  - Accounting fees.
  - Bank charges.
- Indirect costs remain the same, no matter how much of the product is being produced or how much income is being generated from crop sales.
- Direct costs are directly related to the production of the crop that generates the income.
- Examples of direct costs include:
  - Seasonal worker wages.
  - Agrochemicals.
  - PPE.
  - Tools and equipment.
  - Packing costs.
  - Fuel.
- Direct costs can vary depending on the size of the crop, as more of these costs will be required the more crop is being produced and packed.
- Large equipment (not production tools) and infrastructure are not seen as either direct or indirect costs but rather as capital expenditure.
- Any business is only successful if it makes a profit, meaning that it makes more money than it spends.
- Profit can be categorised as either gross profit (AKA gross margin) or net profit (AKA net income).

- Gross profit is the difference between the total amount of money made from selling the fruit (known as net sales) and the direct costs of producing that crop (not including indirect costs).
- Net profit is the amount of money that the farm made after all costs (direct and indirect) are subtracted.
- If the farm spent more on total costs than it earned by selling fruit, this number will be negative and referred to as a net loss.
- Net profit or loss is not in itself a conclusive indication of whether a farm is successful or not.
- A farm may show a net profit, but only have made a profit because of, for example, large grants that added to income, meaning that production itself was unprofitable.
- Income refers to all the money a farm makes and is categorised by which source the income came from, into:
  - Current income (income from produce sales).
  - Capital income (sales of assets such as machinery, land, etc.).
  - Sundry income (interest received, rent income, grant income, etc.).

IAC0402: The management concepts and basic principles of planning, organising, leading and controlling are defined within the horticultural farming context

- Management involves multiple general practices, including:
  - Planning.
  - Organising.
  - Leading.
  - Controlling.
- Planning is the process of setting clear objectives for the business and its employees and determining the best strategies to achieve them.
- Planning involves analysing factors that may hinder, simplify or complicate the process being planned.
- Planning is used in every production practice and business operation.
- Good planning ensures that resources (including money, time, stock, and labour) are allocated effectively, and that wastage is limited.
- Good planning also decreases the likelihood of any particular operation or practice failing, which minimises risk (where possible).
- Organising is the process of structuring production practices and managing employees and resources to ensure practices are performed efficiently.
- Organising involves dividing tasks and resources among workers and monitoring all activities to ensure smooth operations.
- Leading is the process of motivating and directing employees to perform their tasks effectively and efficiently.
- Leading requires managers to communicate goals clearly and support employees in their efforts to complete these goals.

- Leadership emphasises building strong relationships with employees, which is essential in labour-intensive industries such as fruit production.
- Good leadership encourages teamwork and creates a positive work culture, helping to maintain high morale during periods when pressure and workload are high.
- Leadership also involves resolving conflicts, providing training, and empowering supervisors so that daily operations run smoothly and safely.
- Controlling is the process of monitoring and correcting production practices to ensure that actual performance matches the objectives and standards set during planning.
- Controlling requires managers to track key performance indicators (KPIs) and compare them to targets and standards.
- Controlling allows managers to notice problems early and implement corrective action when needed.
- Controlling ensures compliance with industry standards and export requirements.

IAC0403: The concepts and basic principles of decision making, problem solving, motivation, delegation are defined and evaluated as it pertains to horticultural production

- Supervising and leadership involves multiple skills, including:
  - Decision-making.
  - Problem-solving.
  - Motivation.
  - Delegation.
- Decision making is the process of selecting the best option or course of action from several options.
- Decision-making requires managers to evaluate information on their possible options and make the most sensible choice for the farm.
- Decision-making is only effective when the person making the decision has good information and enough experience to make the best decision possible.
- Problem solving is the process of identifying, analysing, and resolving issues.
- Problem solving begins with recognising the specific problem, directly or indirectly.
- The problem solver must then gather information to determine the root cause of the problem.
- Once enough information has been gathered, the problem solver can evaluate possible solutions.
- Problem solving is a necessary skill in the farming business, where unexpected problems can frequently occur.
- Motivation refers to the ability of farm managers to inspire and encourage workers to perform their duties with commitment, effort, and enthusiasm.
- Motivating workers is essential in citrus farming because many tasks are labour-intensive and require consistent attention to detail.
- Motivation can be enhanced through:
  - Paying workers fair wages.

- Ensuring safe working conditions.
- Providing training and opportunities for career advancement.
- Recognition of good performance.
- Clear communication of expectations.

➢ Motivation is also important for reducing labour turnover, which is crucial in farming where skilled seasonal workers and experienced supervisors significantly affect success.

➢ Delegation is the process of assigning specific tasks or responsibilities to specific employees while retaining overall accountability for results.

➢ Delegation is necessary in a large organisation like many citrus farms, as it would be impossible for one individual to manage every aspect of its daily operations.

➢ Delegation frees managers to focus on higher-level decisions involved in running the entire farm.

➢ Delegation also builds employee competence and confidence by giving them opportunities to develop their skills.

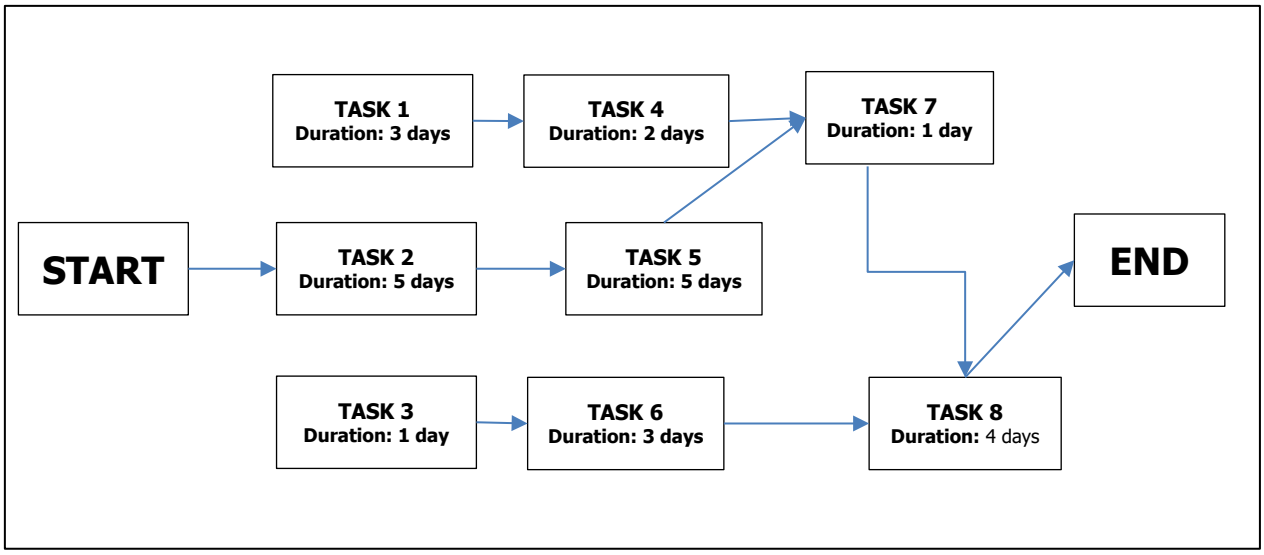
IAC0404: The concepts and basic principles of planning and scheduling (PERT chart) are defined and evaluated as it pertains to horticultural production

➢ Program Evaluation and Review Technique (PERT) charts are diagrams used to plan, organise, and represent the necessary tasks within a certain project.

➢ PERT charts help to visualise a project and create an effective timeframe for the project.

➢ In agriculture, these charts can be used when planning a new development (such as a new orchard) or a repeated operation (like the yearly harvest).

➢ Below is an example of a PERT chart:



IAC0405: The concepts and basic principles of continuous improvement are defined and evaluated as it pertains to horticultural production

➢ Continuous improvement is the ongoing process of evaluating and enhancing aspects of production to achieve better efficiency, higher fruit quality, and increased profitability over time.

➢ Continuous improvement involves regularly reviewing information on:

- Fruit quality.
- Tree health.
- Packing.
- Stock usage.
- Market feedback.
- Profit and loss.

- By reviewing this information, managers can identify areas where production practices or management methods can be improved to increase profitability.
- Continuous improvement is only effective if based on reliable information.
- Continuous improvement helps producers respond to changing market demands and other risks like weather shifts.
- Continuous improvement supports the adoption of new technologies.
- Continuous improvement often involves making small, ongoing changes that add up to significant improvements over several seasons.

IAC0406: Reasons for and procedures for effective meetings are justified

- Effective meetings ensure that important decisions are made collectively and correctly.
- Meetings improve communication between farm owners, managers, supervisors, and workers, reducing misunderstandings that could affect productivity and quality.
- Effective meetings allow problems to be identified early and addressed promptly.
- Effective meetings encourage participation and accountability by giving all relevant personnel an opportunity to contribute ideas and accept responsibilities.
- Meetings must be well managed to avoid wasting time discussing irrelevant issues, which can frustrate participants and delay discussing important topics.
- Effective meetings assist with compliance with labour laws, food safety standards, and industry regulations.
- The purpose and objectives of the meeting should be clearly defined to ensure that discussions remain focused and productive.
- A detailed agenda should be prepared and distributed in advance so that participants can prepare adequately.
- The correct participants should be invited, ensuring that all relevant decision-makers and stakeholders are present.
- The meeting should start on time and be chaired by a competent person who controls discussions and keeps to the agenda.
- Clear rules for participation should be established to allow respectful discussion and equal contribution.
- Accurate minutes should be recorded, capturing decisions, responsibilities, and deadlines.
- Action items should be assigned to specific individuals to ensure accountability and follow-through.
- The meeting should end with a summary of decisions made and actions required.

- Minutes should be distributed promptly after the meeting to confirm agreements and serve as a record.

IAC0407: Farm systems are defined and the component thereof is listed

IAC0408: The role of farm systems in effective management of the farm is explained

- A farm system is the organised and interconnected set of biological, physical, economic, and managerial elements that work together to produce a crop within a specific environment.
- Farm systems are a way of viewing the citrus farm as a single unit in which orchards, labour, equipment, inputs, natural resources, and management practices interact.
- Farm systems are useful when managing a farm to emphasise that changes in one part of the system can directly affect other components of the farm.

self-assessment

KT0401: General Business Management Concepts and Principles

Can I?	Y/N
Can I define the concepts of costs and income?	
Can I calculate profit or loss?	
Can I differentiate between net and gross profit or loss?	
Can I define and list inputs?	
Can I differentiate between variable and fixed costs?	
Can I list common variable and fixed costs?	
Can I differentiate between indirect and direct costs?	
Can I list common indirect and direct costs?	
Can I differentiate between types of income?	
Can I effectively plan production practices?	
Can I organise production practices?	
Can I lead workers?	
Can I control production practices?	
Can I make decisions accurately and consistently?	
Can I solve problems in the workplace?	
Can I motivate workers?	
Can I delegate work to workers?	
Can I describe and interpret PERT charts?	
Can I implement continuous improvement practices?	
Can I plan and manage effective meetings?	
Can I define the types and role of farm systems?	

work scenario reference

To learn about how the above information is applied in practice, please look at the following workplace scenarios:

IAC Code	IAC Title	Relevant Work Scenario(s)
IAC0401	Basic financial principles related to viable business practices such as input costs, profit/loss and income are defined and explained as it pertains to horticultural production	A1, A2, A3, I1, J2
IAC0402	The management concepts and basic principles of planning, organising, leading and controlling are defined within the horticultural farming context	A2, A3, A4, K2, K5
IAC0403	The concepts and basic principles of decision making, problem solving, motivation, delegation are defined and evaluated as it pertains to horticultural production	A2, A3, A4, K2, K5
IAC0404	The concepts and basic principles of planning and scheduling (PERT chart) are defined and evaluated as it pertains to horticultural production	A1, A2, K2, K5
IAC0405	The concepts and basic principles of continuous improvement are defined and evaluated as it pertains to horticultural production	A2, A3, A4, A5, D3
IAC0406	Reasons for and procedures for effective meetings are justified	K1, K2, K3, K4, K5
IAC0407	Farm systems are defined and the component thereof is listed	A1, A2, A3, A4, L1
IAC0408	The role of farm systems in effective management of the farm is explained	A1, A2, A3, A4, L1

KM-08-KT05: Farm Management Information Systems (16%, 1.28 credits)

Topic Elements

The content of this chapter covers the following topic elements:

- KT0501: Agricultural data, information and knowledge management concepts and principles

1. KT0501: Agricultural Data, Information and Knowledge Management Concepts and Principles

IAC0501: Data, information and knowledge management concepts are defined in terms of their role in horticultural production

- Data refers to raw, unprocessed facts and measurements collected from various production practices.
- Data in citrus production includes (but is not limited to) records of:
  - Sample results.
  - Water usage.
  - Weather readings and forecasts.
  - Pest populations.
  - Agrochemical usage.
  - Labour time.
  - Yield.
- Data is turned into information to enable producers to identify trends and judge the success of production practices.
- Information is data that has been organised, interpreted, or analysed so that it becomes meaningful and useful for decision-making.
- This conversion is usually performed by summarising data into reports, tables, or diagrams to be more easily interpreted.
- Information is more useful than data and forms the basis for all management decisions.
- Knowledge is the understanding gained from experience, training, and the interpretation of information, which allows workers and managers to make informed, effective decisions.
- Knowledge includes practical expertise and learned experience.
- Knowledge management is the process of capturing, storing, sharing, and applying both information and knowledge.

- Knowledge management ensures that necessary knowledge and information are shared among all workers who need them, ensuring successful production.

IAC0502: The importance of documenting data and information is argued

- Documenting data and information in the form of recordkeeping is an essential aspect of agrochemical applications and irrigation.
- Records must be kept of chemicals issued from the store, quantities used, and in which orchard and block the chemicals were applied.
- These records are only effective if they are current, meaning up to date, and accurate.
- Currency refers to records being up to date by recording information as soon as possible after an event occurs.
- Citrus producers must maintain current records for audits, and outdated data can lead to compliance violations or penalties.
- If a quality issue or contamination arises, current records help quickly trace the problem back to a specific date, lot, or orchard block.
- Current records ensure that all workers and managers are working with the same, most recent information — avoiding confusion or duplication of work.
- Accuracy means the records are correct, complete, and reflect the true situation in the storeroom.
- A system must be in place from which we must always be able to tell what agrochemicals are in storeroom, and how much there is of each one.
- There are various ways to keep stock records in an agrochemical store, but any system must record the details of any agrochemicals in the storeroom.
- The systems must also record any issuing, use, or disposal of agrochemicals.
- All incidents must be recorded, including accidents or near accidents where workers were or could have been injured or killed, safety was compromised, or property was damaged.
- Records should also be kept of all chemical applications, as these are often required by buyers overseas, or by various government bodies.
- These reports also play a role in the financial management of your farm by keeping track of actual agrochemical stock usage compared to the usage recorded by workers.

IAC0503: Historical information on orchard production and environmental conditions and the uses thereof are discussed

Refer to IAC0502: The importance of documenting data and information is argued.

IAC0504: The purpose of environmental information and the impact thereof on activities and production targets and decision making processes are evaluated

Refer to IAC0502: The importance of documenting data and information is argued.

IAC0505: Internal and external records and reporting structures are identified and discussed

Refer to IAC0502: The importance of documenting data and information is argued.

IAC0506: The purpose and methods of collection and analysis of agricultural data is justified and applied

Refer to IAC0502: The importance of documenting data and information is argued.

IAC0507: The collection and recordkeeping of agricultural data is described and motivated

IAC0508: Methods of report writing and presentations are applied

- Report writing is the structured process of presenting information, analysis, and recommendations in a clear, organised, and professional format for decision-making in citrus farming.
- It typically includes sections such as an introduction, objectives, methodology, results or findings, discussion, conclusions, and recommendations.
- Reports should be based on accurate and documented data, such as orchard production records, environmental measurements, labour logs, or financial information.
- Charts, tables, and graphs are often used to summarise key information like yield trends, pest incidence, irrigation volumes, or pack-out percentages, making it easier for readers to understand patterns.
- Reports must be tailored to the audience, whether farm managers, supervisors, cooperative boards, or export certification auditors, ensuring clarity and relevance.
- They provide a permanent record of orchard performance, financial results, environmental conditions, and management decisions, which supports monitoring, evaluation, and planning.
- Presentations are a visual and verbal method of communicating data, findings, and recommendations to stakeholders in a citrus-farming context.
- They often use tools such as PowerPoint, charts, diagrams, photographs, or video clips to clearly illustrate trends, issues, or successes in orchard management.
- Presentations should follow a logical sequence, starting with background information, followed by key findings, analysis, and actionable recommendations.
- They are interactive, allowing managers, workers, or cooperative members to ask questions, provide feedback, and clarify complex information for better understanding.
- Effective presentations enhance decision-making by visually highlighting critical information, such as pest outbreaks, irrigation efficiency, or export-quality performance, enabling quick and informed responses.
- They are particularly useful for training farm staff, reporting to investors or cooperative boards, and presenting results during audits or certification inspections.

self-assessment

KT0501: Agricultural Data, Information and Knowledge Management Concepts and Principles

Can I?	Y/N
Can I differentiate between data, information, and knowledge?	
Can I describe the uses of data in citrus production?	
Can I list common types of data in citrus production?	
Can I describe how data is turned into information?	
Can I describe the uses of information in citrus production?	
Can I describe the uses of knowledge in citrus production?	
Can I explain the importance of recordkeeping for agrochemical applications and irrigation?	
Can I design and implement a recordkeeping system?	
Can I write accurate, well-structured reports?	
Can I select the best way to present information?	
Can I prepare effective presentations?	

work scenario reference

To learn about how the above information is applied in practice, please look at the following workplace scenarios:

IAC Code	IAC Title	Relevant Work Scenario(s)
IAC0501	Data, information and knowledge management concepts are defined in terms of their role in horticultural production	A2, A3, A4, A5, D3
IAC0502	The importance of documenting data and information is argued	A2, A3, A4, A5, D3
IAC0503	Historical information on orchard production and environmental conditions and the uses thereof are discussed	A2, A3, A4, A5, L1
IAC0504	The purpose of environmental information and the impact thereof on activities and production targets and decision making processes are evaluated	A2, A3, A4, A5, L1
IAC0505	Internal and external records and reporting structures are identified and discussed	A2, A3, A4, A5, D3
IAC0506	The purpose and methods of collection and analysis of agricultural data is justified and applied	A2, A3, A4, A5, D3
IAC0507	The collection and recordkeeping of agricultural data is described and motivated	A2, A3, A4, A5, D3
IAC0508	Methods of report writing and presentations are applied	A2, A3, A4, A5, K5

KM-08-KT06:
Farm Renewal Strategy
(16%, 1.28 credits)

Topic Elements

The content of this chapter covers the following topic elements:

- KT0601: New vineyards/ orchards to be established
- KT0602: Replacement

1. KT0601: New Vineyards/ Orchards to be Established

IAC0601: The aspects to be considered in the establishment of new orchards/vineyards are evaluated in terms of their impact on farm renewal

IAC0602: The decision-making criteria in the farm renewal strategy are identified

IAC0603: Planning and costing aspects related to the establishment of new orchards/vineyards are discussed

IAC0604: Methods and operations to be applied in the establishment of new orchards/vineyards are discussed

For all IACs, refer to the study guide for KM-02: Vineyard or Orchard Establishment.

work scenario reference

To learn about how the above information is applied in practice, please look at the following workplace scenarios:

IAC Code	IAC Title	Relevant Work Scenario(s)
IAC0601	The aspects to be considered in the establishment of new orchards/vineyards are evaluated in terms of their impact on farm renewal	A1, B1, B2, B3, B4
IAC0602	The decision-making criteria in the farm renewal strategy are identified	A1, B1, B2, B3, B4
IAC0603	Planning and costing aspects related to the establishment of new orchards/vineyards are discussed	A1, B1, B2, B3, B4
IAC0604	Methods and operations to be applied in the establishment of new orchards/vineyards are discussed	A1, B1, B2, B3, B4

2. KT0602: Replacement

IAC0605: The aspects to be considered in the replacement of orchards/vineyards are evaluated

IAC0606: Planning and costing aspects related to the replacement of orchards/vineyards are discussed

IAC0607: Methods and operations to be applied in the replacement of orchards/vineyards are discussed

For all IACs, refer to the study guide for KM-02: Vineyard or Orchard Establishment.

work scenario reference

To learn about how the above information is applied in practice, please look at the following workplace scenarios:

IAC Code	IAC Title	Relevant Work Scenario(s)
IAC0605	The aspects to be considered in the replacement of orchards/vineyards are evaluated	A1, B1, B2, B3, B4
IAC0606	Planning and costing aspects related to the replacement of orchards/vineyards are discussed	A1, B1, B2, B3, B4
IAC0607	Methods and operations to be applied in the replacement of orchards/vineyards are discussed	A1, B1, B2, B3, B4