Food and Agriculture Organization of the United Nations

AfricaSeeds

SEEDS TOOLKIT

Module 1: Development of small-scale seed enterprises

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This provides a stepwise guide for the establishment of commercially viable seed enterprises in farmers' communities. It covers the critical steps from the business plan to the production of seeds for sale.

Contents

Foreword

The global community, through the Sustainable Development Goals, has committed to achieving a world free of hunger by 2030. This will require the sustained production of about 60 percent more food than at present, food that is both nutritious and safe, and produced in ways that do not damage the environment. Under most scenarios, there are no surplus land or water resources to deploy to increase agricultural production. In fact, the most sustainable path to this goal is through enhanced productivity in a sustainable way. That means producing more yield with fewer external inputs. To support this, farmers need to use well-adapted crop varieties.

FAO and partners work with countries to increase farmers' use of quality seed and planting material of well-adapted varieties, particularly for the rural dwelling resource poor small-scale and family farmers who produce most of the food consumed in vulnerable communities of developing countries.

A country's seed delivery system is best conceived as a value chain composed of interrelated components – from the development of well-adapted and nutritious crop varieties and their adoption by farmers, through the production and distribution, including sales, of quality seeds and planting materials, to on-farm utilization of these inputs by farmers. The effective functioning of the value chain, enabled by the applicable national seed laws, policies, strategies, action plans and regulations, depends largely on the extent to which the stakeholders are able to put into practical use the relevant knowledge and skills required for producing quality seeds and planting materials.

This Seeds Toolkit has been developed to support practitioners along the entire seed value chain to acquire the knowledge and skills they need in order to deliver quality seeds and planting materials of well-adapted crop varieties to farmers. The Toolkit is designed primarily for capacity building activities, especially for small-scale farmers and small and medium-scale entrepreneurs, and contains six interrelated modules. These modules address: the setting up of small-scale seed enterprises; the processing of seeds; quality control; and the storage and marketing of seeds. There is also a module on seed regulatory matters. These easy-to read modules of the Toolkit should also be useful for policy-makers and other practitioners interested in better understanding the workings of effective seed delivery systems.

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Director Plant Protection and Production Division

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TECHNICAL REVIEWERS

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Acronyms

AFSTA	African Seed Trade Association
APSA	Asia and Pacific Seed Association
BCS	Best Crop Seeds (hypothetical name adopted for hypothetical enterprise used herein)
CPF	Country Programming Framework
FAO	Food and Agriculture Organization of the United Nations
ISTA	International Seed Testing Association
NGO	non-governmental organization

Introduction

Small-scale private enterprises provide diversity and increase competition in the seed supply system. They have close contact with farmers and therefore incur reduced transport, distribution and supervision costs compared with large-scale seed companies. However, specific technical knowledge and skills are required to set up and run small-scale seed enterprises; appropriate guidance and training can play a significant role.

This illustrated module is based on a manual published by FAO: *Small-scale seed enterprise: Guidelines and business skills for small-scale seed producers in Afghanistan*. The manual has been very useful for seed growers and farmers with little knowledge of formal seed technology or experience in managing private businesses. This new adapted module aims to support seed practitioners and farmers in similar circumstances in other countries around the world.

The module comprises ten chapters. It is intended for use in training, and each chapter includes exercises designed to provoke discussion and brainstorming during training sessions.

Chapter 1 explains the term "seed enterprise" and highlights additional specialized activities needed to produce good seed crops. It aims to ensure that the producers or owners of enterprises understand clearly the business concept: the purpose of a seed enterprise is to produce good seed to be sold for profit.

Chapter 2 illustrates the factors to consider when planning to start a seed enterprise, for example, personal attributes, choice of business structure, crop and variety considerations, money and resources required, and risk analysis.

Chapter 3 uses concrete examples to define and explain the costs typically involved in seed production. A comparison is made between production costs and expected revenue from seed sales to determine the level of profit.

Chapter 4 focuses on the business plan, with examples of key areas to include when starting a hypothetical seed enterprise. Participants should use the examples and explanations as a guide when formulating their own business plan.

Chapter 5 discusses production planning and outlines the activities required in the field through to harvesting, for example, choice of contract growers and land for seed production, use of early generation (basic or foundation) seed, adoption of crop husbandry practices, rogueing or removal of unwanted plants, field inspection, harvesting and threshing.

Chapter 6 describes the post-harvest activities (e.g. seed cleaning and treatment, packaging and storage) required to transform seed from the raw to the processed product and to prepare it for marketing.

Chapter 7 explains how all seed lots are sampled and tested before delivery to customers. The quality results from the seed-testing laboratories are a guarantee for both enterprise and customer.

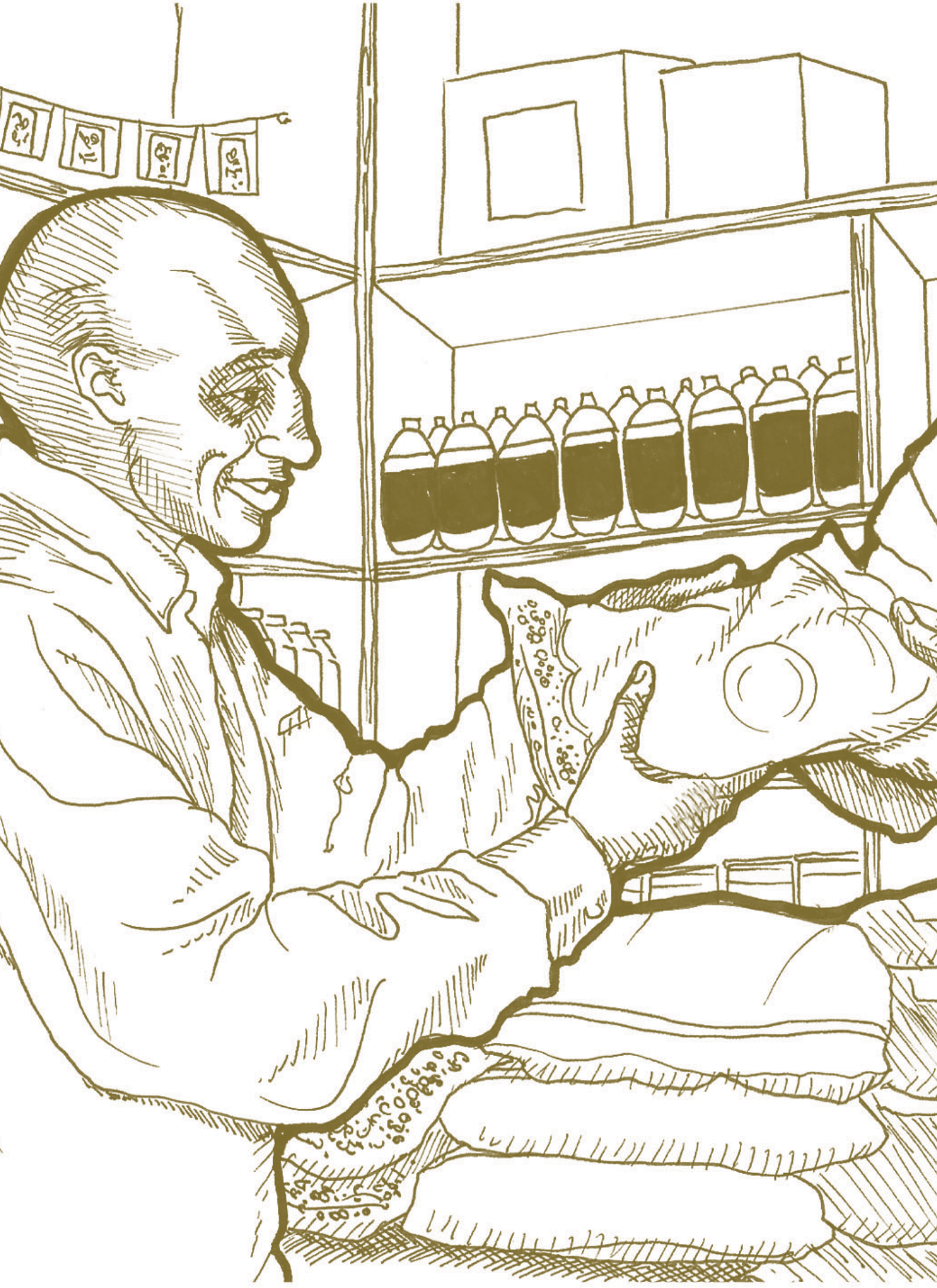
Chapter 8 discusses the recommended techniques for promoting seed to potential buyers. Enterprises need to understand that in order to sell the seed they produce, they must be proactive, identifying and influencing the seed market.

Chapter 9 outlines the day-to-day management issues involved in running a seed enterprise, for example, internal organization, recording, monitoring and evaluation. There are examples of entries to include in the various records.

Finally, **Chapter 10** discusses the future growth of the enterprise and examines the challenges. It explains how to expand a business or join forces to form seed associations.

The ten chapters provide a good understanding of basic seed production techniques and outline the skills required to run a successful seed enterprise. Retain the module for reference.

1 What is a seed enterprise?



What is a seed enterprise?

1

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A seed enterprise is a private undertaking for the **production and sale of quality seed** to farmers. Before you undertake a seed enterprise, verify demand: you must be able to sell the seed you produce.

SELECTING CROPS AND VARIETIES

Select the crops and varieties that farmers want to produce. Farmers need to buy quality seed to cultivate on their farms. Beware that not all crops will make a successful seed business. Opt for the crop (or combination of crops) that will bring the best economic benefit to the enterprise. Where possible, choose crops with high economic value. Staple cereals do not usually have high economic value; a solution can therefore be to combine cereal crops with other higher value crops.

PRODUCING SEED IN THE FIELD

The enterprise must be able to produce the seed it intends to sell. One option is to produce its own seed. Alternatively, it can draw up contract agreements with farmers, who then produce seed on their farms for the enterprise.

Selecting crop varieties

notes

Ensure that the seed meets acceptable quality standards (physical and genetic purity, germination and health status). All operations require close attention: sowing, growth in the field, harvesting and threshing, cleaning and storage. In seed production, adopt the good agronomic practices of crop cultivation. Additional specialized activities are also required, for example, sowing seed of known origin, rogueing the field to remove off-types, inspecting the field independently, cleaning and packaging the seed, collecting samples and testing the seed for quality, and promoting the seed to other farmers.

Rogueing and field inspection

Farmers in a field

1

notes

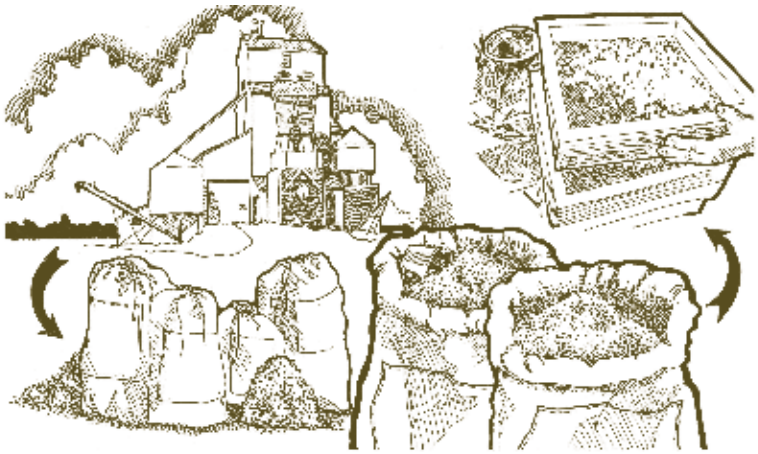
CLEANING, TREATING AND PACKAGING SEED

Clean the seed to make it physically pure and to remove all unwanted materials (e.g. seed of other crops, weed seeds, chaff, stones, broken and shrivelled grains). If required, apply an appropriate chemical treatment to protect the seed from pests and diseases (note: use chemical treatment only when absolutely necessary). Use a suitable and attractive packaging material to preserve the seed's quality until sowing. Label the bag with relevant information to maintain the identity of that particular lot of seed and to promote its use among farmers. If a chemical product has been used to treat the seed, include a warning against using the seed for human consumption or feeding animals.

STORING SEED

Seed is a living product and it must be stored under good conditions until it reaches the farmer for sowing.

Seed cleaning site



Seed warehouse

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TESTING SEED FOR QUALITY STATUS

Test the quality of the seed to ensure that the product you sell is clean, without disease and true-to-type; it must germinate and grow well in the field. Testing may be done internally and/or with an external agency.

MARKETING SEED TO FARMERS

Aim to sell all the seed you produce and avoid unnecessary carryover of unsold seed from one season to the next. You can only sell your seed if there is demand for it: demonstrate your seed's quality attributes and convince agencies and other farmers to buy it. Encourage the farmers in your own community to buy your seed on a regular basis; you will make your business sustainable and build a reputation within the community.

Laboratory testing for seed purity

1

notes

EXERCISES AND DISCUSSION POINTS

1. Outline the strengths and weaknesses of different seed production methods in your community.
   Which method do you prefer and why?

2. Rank the main field crops in your community in order of their economic value. What types of inputs and services are needed to produce good seed of the top two crops? Which of the crops identified would you focus on initially and which ones later? Justify your answers.

② Getting ready to start?

Getting ready to start

2

notes

Starting and managing a successful seed enterprise requires talent, skill, discipline and hard work. It can bring you status and respect within the community. Before deciding to start, evaluate your strengths and weaknesses as a potential owner and manager of a seed enterprise

WHY DO YOU WANT TO START A SEED ENTERPRISE?

A seed enterprise is only possible if there is a market for quality seed in your area. Think carefully and assess your reasons for going into the seed business. To make money is one, but there are other reasons:

- To seize a business opportunity, filling a gap in the absence of other seed suppliers.
- To use your knowledge, experience and resources to run your own business.
- To expand your existing business by adding seed to it.

WHAT SKILLS DO YOU NEED TO RUN A SEED ENTERPRISE?

The success of a seed enterprise depends on its owner or owners. A successful business owner must have the ability to operate as described below.

Plan, prepare and organize

Careful planning, preparation and organization are essential in seed production. Sow good basic or foundation seed from the outset and maintain a good crop to harvest good quality seed.

Planning, preparing and organizing

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Make timely decisions – also under pressure

Time is of the essence in seed production: many activities in seed production are critically time-bound and seasonal. Manage your time efficiently and follow through every detail. Remain in total control and do not take for granted anything that may influence the oucome of your business.

Maintain strong motivation – always

Seed production carries many risks (e.g. unfavourable weather, pest and disease outbreaks, price fluctuations). Not every season will be a good one: be prepared for yields and profits to drop in some years. However, never lose hope, even in difficult years: maintain motivation and minimize constraints.

Get along with all kinds of people

Stick to the principle, "the customer is always right". Maintain good relations with your customers and others associated with your business regardless of whether you like them. Remember your primary motive: convince farmers to buy your seed and to remain loyal customers.

Making timely decisions

2

Learn, be flexible, look ahead

Technologies are constantly changing in the seed business. Be open to new ideas and keep up to date with developments (e.g. introduction of new varieties, evolving market conditions, activities of competitors or other producers).

Find out about and participate in meetings, workshops, seminars, trade shows and other relevant events.

WHICH ENTERPRISE STRUCTURE IS BEST FOR YOU?

There are several ways to run a seed enterprise: as an individual business; as a family enterprise; as a partnership or cooperative (of a small group of farmers). Research the legal requirements for establishing a seed business: seed policy (if it exists), seed law, tax laws, registration and licensing requirements etc. Which structure you decide on may depend on legal requirements or limitations. Every business structure has both advantages and disadvantages.

Research for establishing a seed business

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Individual business

Advantages:

- You make the decisions without seeking anyone's permission.
- You keep all the income.
- There are no misunderstandings.

Disadvantages:

- You may require the skills of others; discovering this can be costly and time-consuming.
- You must provide all the finances and other resources (equipment, inputs etc.).
- You bear all the risks.

Family enterprise

Advantages:

- All benefits remain within the family.
- Family resources can be pooled easily.
- Trust and loyalty tend to be strong between family members, and families are inclined to stick together in hard times.
- Family members tend to be committed to success and willing to make sacrifices, because everyone has a stake in the business.
- Concern for future generations encourages long-term thinking about the growth and success of the business.

Disadvantages:

- Rivalry among family members may jeopardize the business.
- Succession can be a sensitive subject and is a potential source of dispute.
- Personal ties can inhibit the expression of honest opinion.
- One family member may end up dominating the business.
- Older members may refute new ideas and resist change.

Group enterprise

Advantages:

- Several people can share ideas and be more effective than an individual when analysing problems and planning.
- More people working together can lead to increased output and higher revenue.
- Groups may have easier access to credit at a lower cost.

Disadvantages:

- Disagreement among group members can lead to conflict.
- Weak leadership could result in business failure.
- Decision-making can end up dominated by a few key members to the exclusion of others.
- Groups tend to depend on outside financing rather than on self-generated resources.

2

WHICH CROPS AND VARIETIES SHOULD YOU PRODUCE?

notes

Not all crops are suitable. For commercial success, the crops you grow must be profitable and there must be sufficient demand. Therefore, the crops and varieties you select depend on the preferences and needs of the farmers who will be buying your seed. Assess carefully these factors with a survey or some other form of market research.

A seed enterprise should not depend on one crop alone. A combination of crops allows you to offer your customers a range of products. The ideal combination comprises crops that can be cultivated in rotation on the same piece of land. However, in practice, different crops require different expertise, inputs and machinery. Therefore, do not grow too many crops at the same time, and focus on no more than three crops. Likewise, limit the number of varieties of the same crop in order to maintain varietal identity and purity.

Staples, such as wheat and rice, have an important place in the farming system. However, it is not easy to sell seeds of these crops, because farmers can normally produce their own seed and are reluctant to buy expensive seed from other sources. An effective solution is to combine staples with more profitable alternatives (e.g. vegetables requiring specialized seed production techniques).

Although it entails more work, **crop combination has advantages**, as you:

- spread the risks of failure due to adverse weather conditions, pests and diseases, price falls etc.;
- produce income at more than one time in the year; and
- optimize labour and other facilities all year round.

Selecting the crops and varieties to produce

notes

HOW DO YOU DECIDE ON THE SCALE OF YOUR BUSINESS?

The scale of your business depends on the size of the market and the expected growth of the enterprise. The capacity you acquire (staff, machinery, processing and storage facilities, and transport) must correspond to the quantity or value of seed produced. Avoid excess or underutilized capacity, as it translates into a loss for your business.

WHAT MARKET NICHE DO YOU WISH TO TARGET?

Marketing is key to the success of your seed business. To be competitive, you must understand your market and how it is changing, and be aware of the challenges ahead.

Your market depends on existing demand. If no farmers wish to buy seed, an enterprise is not viable. Your market may be limited to your village, district or province. Be aware of internal and external market forces that could affect the current and future seed market. Marketing is a dynamic process: be aware and remain alert to current and future needs of farmers.It may be a good idea to sell quality seed of particular crops and varieties attractive to a specific group of prospective buyers. Carry out market research to understand farmers' behaviour and specific requirements. For example, farmers in a given location growing traditional long-duration varieties may be attracted to shorter-duration varieties: they could harvest in time to sow another crop and benefit from double-cropping. Similarly, some farmers may wish to buy disease-tolerant varieties to replace existing susceptible varieties.

Deciding on the most suitable scale of the business

2

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Small seed enterprises must **seek opportunities and identify specific markets.** Once you have identified your market, ask:

- Which crops and varieties do you want to produce and sell?
- Can you deliver higher quality seed and better services than existing suppliers can?
- Will your seed satisfy a need in the farming community?
- What packaging material and sizes (kg) will you use?
- What competition do you envisage? What comparative advantage do you have to cope with competition from other suppliers?
- How can you increase demand for your seed and expand your business?

HOW MUCH MONEY WILL YOU NEED?

The level of investment depends on the equipment, facilities and materials needed for the enterprise. You must be able to estimate the costs of these items.

Compared with normal grain production, quality seed production requires additional inputs, specialized equipment and facilities. Identify your requirements, discover the costs and decide how to raise the necessary funds.

HOW WILL YOU OBTAIN THE NECESSARY FUNDS?

Assess whether you can self-finance the enterprise or whether you need support or credit from an agency, or a loan from a financial institution (e.g. a bank). If you take a loan, verify that the enterprise will make enough money to, i) repay the loan (plus service or interest charges), and ii) leave a reasonable profit (to share with the other members or invest in the business). Considering the interest rates typically charged for agricultural loans, this could prove quite a challenge.

Obtaining the necessary funds

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HOW WILL YOU MANAGE AND CONTROL YOUR ENTERPRISE?

Specialized **skills and expertise** are essential for a successful seed enterprise. If you plan to run the enterprise on your own, you may need to seek the services of others with specific abilities and competencies. In a group enterprise, the members may be able to perform all functions.

Having people with the right skills and technical knowledge is no guarantee of success. A group enterprise needs **rules and regulations** that are agreed on and understood by all members of the group. While it is important to establish penalties for non-obliging members, in practice it may be difficult to discipline partners and colleagues. In some countries, formal by-laws or constitutions are a legal requirement for the registration of small private enterprises.

WHAT RISKS MAY YOUR ENTERPRISE FACE?

A **risk** is any factor that can **cause problems** or **result in loss**. Consider all the possible risks and what can go wrong; then be prepared to minimize the damage.

Seed enterprises can face different kinds of risk:

- Technical (e.g. equipment breakdown, drop in seed quality during storage)
- Production (e.g. poor harvest)
- Financial (e.g. lack of funds to purchase equipment and materials or pay salaries and wages)
- Marketing (e.g. fall in market share due to increasing competition from cheaper alternatives imported from other countries)
- Management (e.g. few key people dominating a small-scale seed enterprise)

Assess the various risks and their potential impact before starting your enterprise and anticipate the appropriate corrective measures.

WHAT OTHER IMPORTANT PRE-CONDITIONS SHOULD YOU CONSIDER?

Before deciding to go ahead with your seed enterprise, consider the following:

- **Name**. The name is important: it must be attractive, easy to remember and meaningful.
- **Logo and slogan**. The name, logo and slogan go hand-in-hand. Choose a simple logo, cheap to print or copy (for stationery, bags, gadgets etc.).
- **Location**. Ensure that the enterprise premises are accessible, recognizable and easy to promote.
- **Remuneration**. How will you compensate yourself and other members of the group?

2

Once you are ready to start your seed enterprise, the above considerations will be useful for developing a comprehensive **business plan**, which will guide your business operations, identify your management requirements and determine your capital needs (see Chapter 4).

notes

EXERCISES AND DISCUSSION POINTS

1. What are the two main crops normally grown in your area? When do farmers need the seed to cultivate these crops? What steps could you take to be more time-efficient and productive than your competitors?

2. What is the most suitable business structure for seed production in your community and why? What are the strengths of this structure? What are its limitations and how can you overcome them?

3. What are the main sources of funds in your community for starting a new seed enterprise? Are they sufficient? If not, where else can you go to seek additional funds? How can you convince your lender to give you the funds you want?

3 Understanding costs and benefits in seed production

Understanding costs and benefits in seed production

3

notes

Know your costs, set your price and estimate your profit: these are the basic elements of any business. To decide on a price for the seed you sell, you must first know your **total costs**.

To launch the enterprise, you need sufficient money not only to pay for all the inputs, but also to cover running costs for a whole year. Remember that you will have no income until you have harvested and sold your first seed crop. If you do not have sufficient funds of your own, you may need to take out a loan. In which case, consider whether you can repay the loan plus service charges and still make a reasonable profit. Carefully estimate the scale of your business: its expected costs, predicted income or benefits, and projected profit.

Do not ignore or underestimate factors contributing to the costs of your business (e.g. your time and labour or that of group or family members). Likewise, do not overestimate your profit – to do so could result in serious difficulties for your enterprise.

In the example below, the dollar ($) is used as a neutral currency and does not necessarily relate in value to the USD or any other national currency.

MAIN COSTS INCURRED BY A SEED ENTERPRISE

There are two broad categories of costs:

1. Fixed costs
Fixed costs do not change with the amount of seed you produce. They include workers' salaries, rent and the cost of machinery and equipment.

Examples of variable cost items

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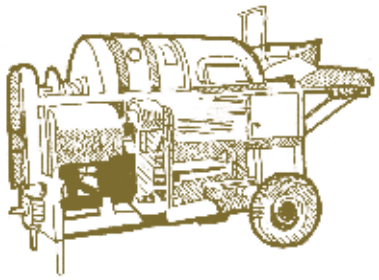
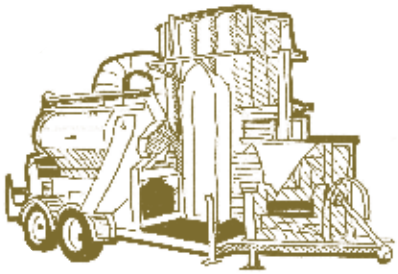
2. Variable costs
Variable costs tend to increase or decrease depending on the quantity of seed produced. They include the costs of basic or foundation seed, fertilizer, labour inputs, packaging and seed treatment material.

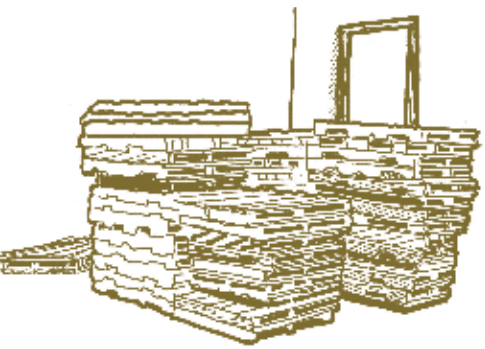
For maximum efficiency, operate at optimum capacity: produce and sell as much seed as possible. For cost-effectiveness, spread your fixed costs over as large a volume of seed as possible.

POTENTIAL PROFITABILITY

Do not start a seed enterprise if you are not certain that you will generate a profit. To make a profit, the expected income from sales must exceed the total spent on production. Assess whether you can make sufficient profit: estimate in advance your total costs and total expected income, and calculate the margin or profit.







It is essential to **estimate the potential profitability of your enterprise**. Let us examine a hypothetical case: your enterprise will produce a wheat crop, followed by a rice crop in the same year and on the same piece of land. Follow the **five steps** below to estimate total costs, expected revenue and potential profit.

Step 1. Calculate the depreciation of your fixed assets

An asset is anything of value owned by your business. Fixed assets are long-term items acquired for the day-to-day operations of the enterprise. They will not be converted into cash within a short period of time (e.g. machinery and equipment, buildings and furniture). You must be in a position to replace such assets at the end of their useful life; for this reason, you need to calculate the depreciation cost.

To calculate depreciation, spread the cost of capital items over their expected economic lives. The depreciation cost represents how much you need to set aside each year to account for the loss in value of the fixed assets with the passage of time. Use this money – combined with the end or salvage value of the asset – to replace the asset in question at the end of its economic life. Use the following formula to calculate depreciation:

$$D = \frac{P - SV}{Y}$$

Where: D = annual depreciation in $ per year; P = purchase price in $; SV = salvage value in $; Y = years of service or economic life.

Consider the examples below. For each fixed asset, the annual depreciation is calculated based on purchase value, expected economic life and estimated salvage or end value.

3

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Calculation of depreciation costs

Item	Purchase cost ($)	Economic life (years)	Salvage value ($)	Annual depreciation ($)
Tractor	10 300	10	5 000	530
Accessories for tractor	2 500	10	1 000	150
Air compressor for tractor	380	10	100	30
Implements for tractor	2 390	10	1 000	90
Thresher	2 000	10	500	150
Seed drill	500	10	100	40
Harvester (windrower)	1 700	10	500	120
Seed cleaner	80 000	20	10 000	3 500
Ridging and ditch machine	240	15	100	10
Transport van	10 000	10	5 000	500
Motorcycle	600	5	200	80
Store	40 000	50	5 000	700
Furniture and fixtures	300	10	50	25
Total	**149 110**			**5 895**

Step 2. Calculate administrative costs

Indirect costs in seed production, such as administrative charges, materials-related costs (e.g. machinery repairs and maintenance, electricity, insurance and rent) and certain labour costs (e.g. supervision and storekeeping), are difficult to associate directly with a unit of seed produced or area cultivated. For practical reasons, they are usually classified as indirect materials costs and indirect labour costs, and are grouped together as administrative costs or production overheads. The example below outlines the administrative costs in a small-scale seed enterprise.

Administrative costs

Item	Value in ($)	Item	Value in ($)
Office supplies	500	Wages for office labour	1 000
Salary for cashier/accountant	800	Vehicle operation costs	2 000
Salary for tractor driver/operator	800	Promotion and marketing costs	500
Total administration charges			**5 600**

Step 3. Calculate the cost of cultivation of 1 ha of wheat seed

You must calculate the direct costs associated with cultivating 1 ha of land. The table below outlines the production costs for wheat (to be followed by rice on the same piece of land in the same year – see Step 4).

notes

Wheat seed production costs (own)

Item	Unit	Quantity	Unit cost ($)	Total ($/ha)
Disc ploughing (fuel and lubricants, casual labour etc.)	ha	1	20.70	20.70
Cultivator harrowing (fuel, casual labour etc.)	ha	1	20.70	20.70
Foundation seed	Bag (35 kg)	1	41.41	41.41
NPK fertilizer	Bag (50 kg)	2.5	18.63	46.58
Urea fertilizer	Bag (50 kg)	5	9.32	46.58
Fertilizer application, bird control, security etc.	ha	1	51.76	51.76
Weed control (herbicide and application)	ha	1	20.70	20.70
Rogueing	ha	1	10.35	10.35
Harvesting (fuel and lubricants, casual labour etc.)	ha	1	20.70	20.70
Threshing (fuel and lubricants, casual labour etc.)	ha	1	20.70	20.70
Transport (fuel, casual labour)	ha	1	10.35	10.35
Seed cleaning	ha	1	15.53	15.53
Seed treatment	ha	1	5.18	5.18
Cost of bags	ha	1	10.35	10.35
Storage (fumigation, inspection etc.)	ha	1	10.35	10.35
Contingencies	ha	1	10.35	10.35
Total cost				**362.32**

Step 4. Calculate the cost of cultivation of 1 ha of rice seed

The table on the right outlines the production costs for rice (following wheat on the same piece of land in the same year – see Step 3).

Step 5. Calculate the profit margin for cultivation of wheat and rice seed on 20 ha of land

1. Calculate your total costs: add up all the costs of producing both wheat and rice seed on 20 ha of land in one year (depreciation costs + administrative charges + wheat seed multiplication costs + rice seed multiplication costs).
2. Estimate your income: estimate the yield for both crops and the price at which you expect to sell your seed (see below).
3. Estimate your profit: compare the total cost with the total income you expect from seed sales.

3

notes

Rice seed production costs (own)

Item	Unit	Quantity	Unit cost ($)	Total ($/ha)
Nursery preparation	ha	1	5.18	5.18
Foundation seed	Bag (35 kg)	0.5	51.75	25.88
Disc ploughing, levelling and ridging	ha	1	62.11	62.11
Uprooting seedlings and carrying to planting site	ha	1	41.41	41.41
NPK fertilizer	Bag (50 kg)	2.5	18.63	46.58
Urea fertilizer	Bag (50 kg)	5	9.32	46.58
Crop management (irrigation, fertilization etc.)	ha	1	103.52	103.52
Weed control by hand	ha	1	31.06	31.06
Rogueing	ha	1	10.35	10.35
Harvesting (fuel, maintenance and labour)	ha	1	20.70	20.70
Threshing (fuel and casual labour etc.)	ha	1	20.70	20.70
Transport (fuel, maintenance and labour)	ha	1	10.35	10.35
Seed cleaning	ha	1	15.53	15.53
Seed treatment	Pack	5	1.04	5.18
Cost of bags	ha	1	12.42	12.42
Storage (fumigation, inspection etc.)	ha	1	10.35	10.35
Contingencies	ha	1	10.35	10.35
Total cost				**478.26**

To make a reliable estimate of yield, take into account both the past (your experience over the years) and the present (factors and prevailing conditions in the current year, e.g. rainfall, temperature, pests and diseases).

To forecast the selling price, consider production costs, price levels in past years, expected grain prices, prices charged by other suppliers, your anticipated margin etc. Selling price = total production costs + margin. Note that your **net margin may be subject to taxation** depending on government policy.

Farmers contracted as growers to produce seed must cover all field multiplication costs. In this case, the basic production cost is the farmgate price of the raw or non-cleaned seed you buy from the growers. This procurement price normally amounts to the prevailing market price for ordinary grain plus an agreed premium (e.g. 15%) above the grain price. Your enterprise, on the other hand, must cover all seed processing costs (including transportation).

notes

Summary of own production costs (wheat and rice)

Item	Value ($)	Item	Value ($)
Annual depreciation charges (fixed costs)		**Administration charges (fixed costs)**	
Tractor	530	Office supplies	500
Accessories for tractor	150	Salary for cashier/accountant	800
Air compressor for tractor	30	Salary for tractor driver/operator	800
Implements for tractor	90	Wages for office labour	1 000
Thresher	150	Van operation	2 000
Seed drill	40	Promotion and marketing	500
Harvesting machine	120	**Subtotal administration charges**	5 600
Seed cleaner	3 500	**Total fixed costs**	11 495
Ridging and ditch-making machine	10		
Transport van	500		
Motorcycle	80		
Store	700	**Seed multiplication costs: wheat (20 ha)**	7 246
Furniture and fixtures	25	**Seed multiplication costs: rice (20 ha)**	9 565
Subtotal depreciation charges	**5 895**	**Subtotal seed multiplication costs**	**16 811**
Total production costs	**28 306**		
Value of processed wheat seed from 20 ha: (73 tonnes @ $ 237.14/tonne)			17 430
Value of processed rice seed from 20 ha: (100.1 tonnes @ $ 295.71/tonne)			29 601
Total value of output (processed wheat and rice seed)			47 031
Net margin ($)			18 725
Net margin (%)			66.2%

Your **selling price** is based on:

- raw seed procurement cost;
- depreciation charges of fixed assets;
- administrative charges;
- processing cost; and
- expected margin.

3

notes

Summary of contract production costs (wheat and rice)

Item	Value ($)	Item	Value ($)
Annual depreciation charges (fixed costs)		**Administration charges (fixed costs)**	
Tractor	530	Office supplies	500
Accessories for tractor	150	Salary for cashier/accountant	800
Air compressor for tractor	30	Salary for tractor driver/operator	800
Implements for tractor	90	Wages for office labour	1 000
Thresher	150	Van operation	2 000
Seed drill	40	Promotion and marketing	500
Harvesting machine	120	**Subtotal administration charges**	**5 600**
Seed cleaner	3 500	**Total fixed costs**	**11 495**
Ridging and ditch-making machine	10		
Transport van	500	**Buying 84 tonnes raw wheat seed @ $89.29 from growers**	**7 500**
Motorcycle	80	**Buying 112 tonnes raw rice seed @ $104.17 from growers**	**11 667**
Store	700	**Processing 84 tonnes wheat seed @ $3.7/tonne**	**311**
Furniture and fixtures	25	**Processing 112 tonnes rice seed @ $2.8/tonne**	**314**
		Seed treatment, bags and storage costs for 84 tonnes wheat seed	**482**
		Seed treatment, bags and storage costs for 112 tonnes rice seed	**516**
Subtotal depreciation charges	5.895	**Subtotal raw seed procurement and post-harvest handling costs**	**20 790**
Total production costs			**32 285**
Value of processed wheat seed from 20 ha: (73.5 tonnes @ $237.14/tonne)			17 430
Value of processed rice seed from 20 ha: (100.1 tonnes @ $295.71/tonne)			29 601
Total value of output (processed wheat and rice seed)			47 031
Net margin ($)			**14 746**
Net margin (%)			**45.7%**

If you contract farmers for seed production, you must have sufficient cash on hand at harvest time to buy raw seed from the growers. This volume of cash will be your enterprise's greatest cost and it must be available at the right time.

notes

EXERCISES AND DISCUSSION POINTS

1. Why is it important to spread fixed costs over as much seed as possible? What should you do to keep your fixed costs as low as possible?

2. Suppose you buy a new tractor at $10 000 and a van at $15 000; both are to last 10 years, after which you intend to sell them at $1 000 and $1 500, respectively. Calculate the total annual depreciation of these assets. Under what conditions would it be difficult to buy a new replacement tractor and van using the accumulated depreciation and salvage values at the end of 10 years?

3. If the total production cost of an enterprise is $50 000 and the total revenue from seed sales is $75 000, calculate the net percentage margin of the enterprise.

4. When required, what rate of tax do you think small-scale seed enterprises should pay? Why do you consider this a reasonable rate?

④ Making your business plan

Making your business plan

4

notes

A business plan is essential for any enterprise. A person who sets up, owns and invests in an enterprise is an entrepreneur, and a business plan is the entrepreneur's primary tool.

WHAT IS A BUSINESS PLAN?

It is a comprehensive document that describes clearly the commercial objectives of the enterprise and answers the following questions:

- **What** resources (human, financial etc.) are required to achieve the commercial goals of the business?
- **Where** will these resources come from?
- **How** will these resources be utilized?

The business plan is a **road map** to success. It indicates the direction to follow – not necessarily a straight road. Check periodically whether you are still going in the right direction: do not wait until you get lost. If you are heading in the wrong direction, take corrective action quickly to get back on track.

WHY DO YOU NEED A BUSINESS PLAN?

1. To highlight the difference between how much you expect to spend on the business (cash flow) and how much you will bring into the business over a given period of time (income).
2. To present the planned operations and their relative costs.
3. To show funding or credit agencies how much your enterprise is worth and how well it will do in the future.
4. To assess the business prospects and make any necessary modifications to ensure a sound basis for the enterprise.
5. To minimize risks the plan should guide business operations and serve as a continuous reference.
6. To promote and market your enterprise and its products.
7. To demonstrate how you will achieve your business goals and objectives.

WHAT SHOULD YOUR BUSINESS PLAN CONTAIN?

Keep the plan for your seed enterprise **simple**. Think hard and carefully. Detail the resources you will use, where they will come from, and how you will operate and manage the enterprise.

notes

Major components of a business plan:

Cover page

1. Introduction
2. Operating plan
3. Financial plan
4. Marketing plan
5. Management plan
6. Conclusion

Cover page

Your cover page provides essential information:.

- Name of the group enterprise
- Contact address
- Telephone numbers and e-mail address
- Web site (where applicable)
- Business logo (Make it simple)
- Business slogan (Keep it short, attractive and to the point)
- Date that the business plan was prepared (month and year)

1. Introduction

The introduction provides an outline of the **resources**, **objectives** and **potential** of the seed enterprise.

- What is the name of the enterprise? What is the structure and ownership of the business? How many members are there? What are the group's objectives? What does the group expect the enterprise to achieve?
- What made you go into the seed business? (e.g. extensive involvement in seed production, skills and experience members will bring to the business [specify], potential market demand) What advantages does your enterprise offer over its competitors? Is there some other special reason for selecting the seed business?
- What types of crop varieties and seed will your group enterprise produce and sell? What is the potential market? (Which groups of farmers will buy it?) What are the potential advantages of your varieties/seed? (e.g. high yield, short duration, disease tolerance, low price, improved quality)
- How do you envisage the profitability, future growth and success of your group enterprise?

Sample cover page


Business Plan

BEST CROP SEEDS

No. 1 John Street, New Town
Northeastern Province, Country AZ
Tel: 01 799 315390
e-mail: bcseeds@gmail.com

You Harvest What You Sow

December 2015

Sample Introduction

Best Crop Seeds (BCS) is a pilot seed enterprise to be established with the technical assistance of FAO as part of its collaboration in implementing the Country Programming Framework (CPF) of Country AZ. Ten leading farmers with multiple years of seed production experience as contract growers will pool their resources, including land and money, to establish the enterprise.

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notes

BCS will rely on the proven knowledge, skills and experience of its leader, Ms Marie Ali, who brings over a decade of seed company managerial experience to the enterprise. Assisting Ms Ali will be Mr Joe King, who has considerable technical experience in seed production and can meet the high quality standards set by the BCS enterprise for its seed production.

The primary objective of Best Crop Seeds is to provide high quality seed of the best wheat and rice varieties to farmers in the Northeastern Province, considered the breadbasket of Country AZ. The enterprise can earn a reputation for quality wheat seed that provides great value to farmers in irrigated land. It will take advantage of the growing demand for quality seed of new wheat and rice varieties with, respectively, outstanding flour and cooking qualities.

BCS will base operations in New Town, the capital of the Northeastern Province, which has one of the largest areas of irrigated land in the country and the fastest-growing market for improved wheat and rice seed. The existing suppliers in the Northeastern Province produce seed either of traditional varieties or of old improved varieties that no longer perform well. The BCS enterprise will be in a good position to capture a significant portion of the local market for wheat and rice seed, introducing new and better-performing varieties.

BCS will differentiate itself from other suppliers through lower pricing policies and unique promotional techniques. By specializing in a small number of the most popular varieties, the BCS enterprise will gain access to the largest segment of a growing seed market for wheat and rice. This tightly focused approach will also make it easier for BCS to attain the position of seed industry leader. The enterprise is projected to return a profit margin of 46% in its very first year of operations, due to its market size and competitive seed prices. The sales revenue for the first year (2016) is projected to exceed $47 000. The profit generated will be reinvested in the business.

2. Operating Plan

The operating plan explains the day-to-day functioning of the seed enterprise.

- How will you acquire land to produce different types of seed requiring different agro-ecological conditions and to accommodate offices and stores?
- What equipment, facilities and materials will you need and why? What is their estimated cost?
- What production inputs will be required and how much will they cost?
- What will be the production and delivery process from the initial to final stages?
- How long will the production and delivery process take? When will the seed reach farmers for planting?
- What expertise and skills will be needed for production and delivery and where will you find them?

notes

Sample Operating plan

A survey of farmers in Country AZ determined that the current annual requirement is about 125 000 tonnes for wheat seed and 10 000 tonnes for rice seed. Most farmers use their own farm-saved seed of old varieties. Quality is poor and the varieties are mixed. There is a constant high demand for quality seed of new varieties, for which farmers are prepared to pay higher prices.

BCS plans to enter the market in October of Year 1. In the first two seasons (20 months), it will sell 1 500 and 2 000 tonnes, respectively, of certified seed of new wheat and rice varieties. This will gradually increase to reach a combined total of about 7 000 tonnes by Year 5. The owners will contribute land, but most seed will be produced by contracted growers on their own land. The enterprise will use initial capital to construct a store with sufficient office space, and to buy furniture, a seed-cleaning plant, a transport van, three motorcycles, ten bicycles, two computers, one printer and five mobile telephones. The business will require additional capital: to buy the necessary inputs (foundation or basic seed, fertilizer, herbicides, packaging material and seed treatment chemicals), to purchase raw seed from contract growers, to undertake post-harvest operations, and to meet other day-to-day expenses. The owners will contribute all the funds required, because the enterprise will not be able to raise a long-term bank loan at the prevailing interest rate of 15%. In the first year, BCS will select key farmers with knowledge of seed production to grow foundation or basic seed of new irrigated wheat varieties on contract. One of the enterprise members is an experienced agronomist who will closely supervise the field operations and coordinate raw seed purchases at harvest time. The owners of BCS have long-term relationships with the area's best farmers and are confident that they will provide quality service.

The enterprise will organize an intensive training programme for all selected growers. It will mount a vigorous campaign to promote the quality of BCS seed in farming communities in order to capture a significant proportion of the seed market and maintain a core of loyal clients.

BCS will carry out the following key operations:
- *Purchase of raw certified seed from contract growers*
- *Cleaning, packaging, treatment and storage of seed*
- *Distribution, marketing and sale of seed*

The various components of each operation and the estimated costs are outlined in the financial plan.

3. Financial Plan

The financial plan describes the enterprise's finances: both requirements and expectations. The overall financial plan comprises plans for **costs**, **sales** and **profit**.

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Costs

- What will be the total costs (i.e. the amount of initial finance required to start the enterprise and operate for the first year – the investment needs)?
- Consider:
  - land and buildings;
  - machinery and equipment;
  - inputs (foundation seed, fertilizer etc.);
  - materials and supplies (packaging, seed treatment etc.); and
  - administrative costs.
- Where will you obtain the money? Options include:
  - own investment (how much of your own resources will go into the enterprise at this stage?);
  - group investment (how much will members contribute?);
  - loan (how much money will you wish to borrow and what collateral security can you offer?);
  - grant (what possibilities exist?); and
  - other sources.
- What will be the fixed and working capital (variable cost) requirements?
- What are the projected costs?

Sales

- What is the total sales (benefit) forecast?

Profit

- What is the projected profitability (size of profits)?

Financial statements

You need to demonstrate the **potential performance** of your enterprise. You have estimated the costs, revenue (sales) and profit, and now you must summarize these to present a snapshot of your enterprise's success. There are four ways to do this:

1) **Prepare an operating cash flow plan**. An operating cash flow plan (for Year 1, expressed by month or season) should answer the following questions:
   - How much cash do you expect to come into and go out of your enterprise each month?
   - How will you ensure that your enterprise does not run short of cash at any time? (Note: Your cash balance in any one month must not be negative.)

2) **Prepare a projected profit and loss statement**. A projected profit and loss statement for Year 1 demonstrates the potential profitability of your enterprise, indicating the expected profit or loss at the end of the cropping season. It summarizes **expenses** (or costs), as well as **revenue** (or sales) obtained during the year, to give two totals: A and B.

notes

Total A = (opening value of seed stock + expenses during the year)

Total B = (closing value of seed stock + revenue during the year)

Expected profit = (Total B) – (Total A)

A successful seed enterprise should aim to sell all its seed during the year (no carryover stock); both the opening and the closing value of the seed stock should equal zero. The profit during the year is the difference between revenue received and expenses incurred. In practice, it is difficult to achieve zero stock at the end of the year. Nevertheless, try to avoid large carryover stocks – for both technical and financial reasons. To facilitate the future sale of carryover stock at a good price, endeavour to maintain the seed's high quality during storage.

3) **Prepare a net worth or balance sheet for Year 1**. The balance sheet shows the financial viability or what the business is worth in financial terms at the end of Year 1. This is usually expressed in the form of assets and liabilities.

4) **Carry out a sensitivity ("what if") analysis.** How will key financial variables (e.g. changes in price levels) affect your enterprise?

The financial year

Financial transactions in an enterprise are recorded in terms of financial or accounting years. This can lead to problems if the farming year differs greatly from the financial year: a cash transaction in one year may relate to activities for output or seed produced in another year. It is preferable if the financial year corresponds closely to the farming year - especially if farming activities are completed within a year (as is the case with many cereals).

Consider carefully the local conditions, relevant external factors and the national financial year. The relationship between the cropping season, the financial year of the enterprise and the national financial year can have significant financial and management implications.

Accounting records

Consider how you will manage and keep your accounting records.

Sample Financial plan

This plan outlines, i) the capital BCS will need to cover its start-up and operating costs, and ii) how much income the enterprise expects to generate after sales of its first batch of wheat and rice seed.

The total costs of establishment and first season operation will amount to $177 300 (summarized in the table on the right):

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Establishment and first season operating costs

Item	Cost ($)	(%)
1. Machinery and equipment costs (fixed costs)		
- Tractor	10 300	
- Accessories for tractor	2 500	
- Air compressor for tractor	380	
- Implements for tractor	2 390	
- Thresher	2 000	
- Seed drill	500	
- Harvester (windrower)	1 700	
- Seed cleaner	80 000	
- Ridging and ditch machine	240	
- Transport van	10 000	
- Motorcycle	600	
- Store	40 000	
- Furniture and fixtures	300	
- Subtotal machinery and equipment costs	**150 910**	
2. Administration charges (fixed costs)		
- Office supplies	500	
- Salary for cashier/accountant	800	
- Salary for tractor driver/operator	800	
- Wages for office labour	1 000	
- Van operation	2 000	
- Promotion and marketing	500	
- Subtotal administration charges	**5 600**	
- Subtotal fixed costs	**156 510**	**88.3%**
3. Seed multiplication costs (variable costs)		
- Buying 84 tonnes raw wheat seed @ $89.29 from growers	7 500	
- Buying 112 tonnes raw rice seed @ $104.17/tonne from growers	11 667	
- Processing 84 tonnes wheat seed @ $3.7/tonne	311	
- Processing 112 tonnes rice seed @ $2.8/tonne	314	
- Seed treatment, bags and storage costs for 84 tonnes wheat seed	482	
- Seed treatment, bags and storage costs for 112 tonnes rice seed	516	
- Subtotal variable costs	**20 790**	**11.7%**
GRAND TOTAL COSTS (initial costs for Year 1)	**177 300**	

With regard to revenue, BCS aims to clean and sell 73 tonnes of wheat seed and 100.1 tonnes of rice seed from 20 ha.

Item	Amount ($)	(%)
1. Sale of processed seed		
- 73 tonnes wheat seed @ $237.14/tonne	17 430	
- 100.1 tonnes rice seed @ $295.71/tonne	29 601	
Total sale of processed wheat and rice seed	**47 031**	

notes

The cash flow (see overleaf) is based on BCS's operational plan during the first cropping season (20 months starting from May) of wheat and rice seed production:

Cash flow plan of BCS for the first cropping season (20 months)

	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.
Initial cash position	20 000	19 599	19 198	18 798	18 396	17 995	17 594	176 711	12 160	8 609
Cash received										
Sale of wheat seed	0	0	0	0	0	0	0	0	0	0
Sale of rice seed	0	0	0	0	0	0	0	0	0	0
Total cash received	0	0	0	0	0	0	0	0	0	0
Cash paid out										
Buy wheat seed from growers	0	0	0	0	0	0	0	4 000	3 000	500
Buy rice seed from growers	0	0	0	0	0	0	0	0	0	0
Processing	0	0	0	0	0	0	0	0	0	0
Seed treatment, bags etc.							482			
Office supplies	42	42	42	42	42	42	42	42	42	42
Salaries and wages	217	217	217	217	217	217	217	217	217	217
Van operation	100	100	100	100	100	100	100	250	250	250
Promotion and marketing	42	42	42	42	42	42	42	42	42	42
Total cash paid out	401	401	401	401	401	401	883	4 551	3 551	1 051
Net cash in hand	-401	-401	-401	-401	-401	-401	-883	-4 551	-3 551	-1 051
Cash at month end	19 599	19 198	18 797	18 396	17 995	17 594	16 711	12 160	8 609	7 558

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	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
	7 558	2 907	2 256	8 927	10 290	9 789	9 288	8 773	18 272	32 771	
	0	5 000	10 000	2 430	0	0	0	0	0	0	17 430
	0	0	0	0	0	0	0	10 000	15 000	4 601	29 601
	0	5 000	10 000	2 430	0	0	0	10 000	15 000	4 601	47 031
	0	0	0	0	0	0	0	0	0	0	7 500
	4 000	5 000	2 667	0	0	0	0	0	0	0	11 667
	100	100	1110	1001	0	0	114	0	0	0	625
				516							998
	42	42	42	42	42	42	42	42	42	42	840
	217	217	217	217	217	217	217	217	217	217	4 340
	250	250	250	250	100	100	100	200	170	170	3 320
	42	42	41	42	42	42	42	42	42	42	840
	4 651	5 651	3 329	1 067	501	501	515	501	501	471	30 130
	-4 651	-651	6 671	1 363	-501	-501	-515	9 499	14 499	4 130	16 901
	2 907	2 256	8 927	10 290	9 789	9 288	8773	18 272	32 771	36 901	

notes

BCS will record and present all financial transactions to enable monitoring and control. Account statements will be prepared periodically to measure performance in terms of profit or loss generated and to determine what action is required.

A forecast profit and loss account for BCS at the end of Year 1 indicates a good pre-tax profit of $14 746. Monthly analysis of the cash flow forecast reveals a cash balance of $36 901. BCS will clearly have more than sufficient cash to implement its planned operations and satisfy its capital needs.

Profit and loss account of BCS (31 December of Year 1)			
Opening valuation ($)		Closing valuation ($)	
-Wheat seed	0	- Wheat seed	0
-Rice seed	0	- Rice seed	0
General expenses ($)		Receipts ($)	
-Depreciation	5 895	Wheat seed sales	17 430
-Raw wheat seed purchase	7 500	Rice seed sales	29 601
-Raw rice seed purchase	11 667	Total receipts	47 031
-Wheat seed processing	311		
-Rice seed processing	314		
-Seed treatment	998		
- Administrative overheads	5 600		
Total general expense	32 285		
Profit	14 746		

The financial transactions outlined in the profit and loss account and the cash account are supplemented by a projected balance sheet, which shows the assets and liabilities (financial viability) of BCS at the end of Year 1. BCS will have nil accounts payable, since raw seed and other direct material purchase will be fully paid during Year 1. Similarly, accounts receivable will be nil because all seed will be sold by the end of Year 1. The balance sheet also indicates a healthy net worth or owner's equity of $180 106. This is what the enterprise will be worth in financial terms at the end of Year 1.

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Balance sheet of BCS Enterprise (31 December of Year 1)			
Fixed assets ($)		Long-term liabilities ($)	
- Machinery, equipment, store	149 100	Bank loan	0
- Accumulated depreciation	5 895	Subtotal	0
Current assets ($)		Current liabilities ($)	
-Cash in hand (end Year 1	36 901	Accounts payable	0
-Accounts receivable (wheat seed stock)	0	Tax payable	0
-Account receivable (rice seed stock)	0	Subtotal	0
Subtotal	36 901	Net worth (owner's equity)	180 106
Total	**180 106**		

As a cost control measure, BCS will monitor causes of variation in its gross margin or gross profit (value of output minus variable cost) and take corrective action. The main causes of variance are normally changes in sales price of seed and prices of inputs. The table below presents a sensitivity analysis, which assesses how net income or profit generated by BCS may be affected by specified changes in key variables (e.g. 15% reduction in revenue resulting from lower sales price of seed, or 15% rise in variable costs arising from increase in price of inputs). In both cases, the business will be sensitive to these changes in terms of percentage changes in gross and net margins; however, it will remain profitable in dollar terms.

Sensitivity analysis

Item	Reference	Scenario A		Scenario B	
	$	$	%	$	%
Total revenue	47 031	39 976	–15	47 031	+15
Total variable cost	20 790	20 790		23 909	
Fixed overhead cost	11 495	11 495		11 495	
Gross margin	26 241	19 186	–27	23 122	–12
Net margin	14 746	7 691	–48	11 627	–21

notes

Given the current costs and prices, another sensitivity analysis is to show the output level at which BCS can break even. The break-even point (in tonnes) for BCS is calculated using the following equation:

Break-even point = Total fixed cost/(Selling price per tonne) – (Variable cost per tonne)

Total fixed cost = $11 495

The average selling price per tonne for both wheat and rice seed could be estimated as ($47 031/173.1 tonnes) = $271/tonne

Variable cost per tonne =$20 790/173.1 tonnes = $120.10/tonne

Therefore break-even point = $11 494/($271 – 120.10) = 76.2 tonnes

The analysis shows that BCS needs to produce a combined total of about 76 tonnes of wheat and rice seed so that the sales revenue equals the total costs incurred. The planned combined output level of 173.1 tonnes is about twice the estimated break-even point, again indicating that BCS is a potentially cost-effective enterprise.

4. Marketing and sales plan

Any marketing strategy comprises four basic elements referred to as the four "Ps": **Product, Price, Place** and **Promotion**. When planning the marketing strategy of your seed enterprise, answer the questions below:

Product (the seed you sell)
Assess the effective demand for your seed and consider how it meets (or not) farmers' needs. Compare your seed with that of other suppliers and explain why farmers will prefer your seed to that of your competitors.

- What will be unique about your seed? (e.g. type of varieties, quality status)
- Which agencies, traders or farmers will be your major customers and where are they located?
- What will be the typical size of their purchases?
- Why will they prefer to buy your seed?
- What type of packaging material and seed treatment will you adopt and why?

Place
Choose locations with care (production fields, seed conditioning and storage facilities, sales points). Location affects transportation costs and access to customers.

- Where will you locate the enterprise offices, storage and conditioning facilities and why?
- Where will you locate your sales points and why?
- Who are your competitors and where are they located?

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- What is their current market share of the seed you wish to offer?
- What types of marketing channels are available and where are they located? (e.g. traders, agri-input dealers, marketing cooperatives)
- What are the strengths and weaknesses of the various channels for selling your seed?

Price

Establish the price of your seed based on your production costs, the willingness of your customers to pay (determined in turn by other suppliers' prices) and your perceived profit margin. The price will vary according to the type of seed and its demand.

- How will you vary your price per unit for agencies, traders and farmers? Why?
- How will you determine the final price? (e.g. group decision, association decision or in consultation with local government)
- What is the price range of other suppliers for the same kind of seed?
- Is your price stable or subject to change? What factors may influence the change in price?
- Why do you think your customers can afford and will be willing to pay the price you charge?
- What scope will there be for discounts on large orders or purchases?

Promotion

Adopt a variety of methods or strategies to inform different categories of customers of the seed you offer and to convince them to buy.

- How will you promote your seed (before and after harvest) to different categories of potential buyers?
- What additional services will you provide to your customers?
- What are the strengths and weaknesses of your competitors?
- How do you intend to cope with the competition and influence the perception of buyers?
- What will be your marketing or seed selling strategy? (e.g. brand image, pricing, product mix, customer-oriented selling approach, after-sale service)

Sample Marketing and sales plan

BCS will offer the same quality (or improved) seed as other suppliers, but will sell at a more reasonable price ($237/tonne for wheat seed and $296/tonne for rice seed, compared with the respective prevailing prices of $240/tonne and $300/tonne). The enterprise will charge significantly less than other companies for its seed because of its lower overheads and smaller number of employees.

As part of this strategy, BCS will promote its seed in farming communities by means of mainly word-of-mouth advertising. This is in line with a recent survey by the Agricultural Extension Department, which shows that most seed-buying farmers in the area prefer close and direct relationships with the seed supplier. BCS sales staff will approach the farmers in person in order to identify their seed requirements and establish how to satisfy them.

notes

BCS will sell most of its seed through dealers in strategic rural locations who have direct dealings with farmers. The ideal dealers will be traders who sell general goods, agrochemicals and farm tools, and are able to provide farmers with credit facilities.

The enterprise will popularize its brand image with a logo depicting three attractive spikes of wheat and a slogan, "You Reap What You Sow". There will be vigorous promotion.

5. Management plan

The management plan explains the organizational and management structure of the enterprise. It outlines the human resources procedures and day-to-day management of the business.

- What are the names and responsibilities of the group enterprise members?
- What additional skilled staff will the enterprise hire? For which tasks and why?
- How will you recruit the personnel?
- What salary will you pay the staff?
- What will be the organizational structure of the enterprise?
- How will you keep the enterprise's accounts and records?

Sample Management plan

BCS plans to keep wage and salary expenses as low as possible, at least initially. To achieve this objective, the group enterprise members who already possess the relevant qualifications and experience will occupy all management positions. The remaining staff will be paid a daily wage. In addition, casual labourers will be hired during busy periods.

Ms Ali has the experience and interpersonal skills to lead BCS in the right direction in collaboration with Mr King. Another member, Ms Betty Adam, a retired certified accountant with valid financial management experience, will manage the enterprise's finances. Her expertise will be vital to the continued financial viability of the business.

With a small number of employees, BCS will encourage dynamic teamwork and open access, unhindered by bureaucracy. The business will use its profits to provide attractive working conditions and appropriate incentives to keep its dedicated staff in the enterprise.

4

6. Conclusion

notes

The conclusion summarizes your goals and objectives and expresses your commitment to the success of your business. It illustrates future plans and perspectives, re-investment plans and plans for expansion, and explains how you expect to realize these plans.

Sample Conclusion

BCS will endeavour to become a leader in the supply of improved wheat and rice seed in Country AZ. The pursuit of high quality will be the driving force behind the business. The enterprise will use the dedication, experience and skill of its members in key technical and management positions. Extensive promotional activity will help to ensure that BCS's customers perceive that they are receiving the best quality seed, on time, and at a reasonable price.

The future of the improved wheat and rice seed industry in Country AZ looks bright. BCS is poised and positioned to take advantage of this commercial opportunity.

EXERCISES AND DISCUSSION POINTS

1. Which parts of the business plan are most important for convincing a bank to lend you money for your seed enterprise? Justify and explain your answer.
2. Design a logo for your new seed enterprise and explain why you think it is appropriate.
3. What marketing links would you focus on to ensure that your enterprise maintains a reliable customer base for a sustainable future?
4. What category of customers do you plan to target each year and why? Estimate the relative market share (%) of your seed?

5 Planning your seed production

Planning your seed production

5

notes

You have made your business plan; you have obtained the necessary funds. The next step is to decide on your seed production strategy. For example, will you produce the seed yourself on your own farm using hired labour or will you contract farmers to produce seed for you?

WHICH CROPS AND VARIETIES SHOULD YOU PRODUCE?

Plan production carefully to meet farmers' demand, taking into account seasonal patterns and future prospects. Meet with farmers and local traders to assess the market and determine what seeds farmers need, can afford and are willing to pay for. Explore other sources of market information, consulting relevant publications or interviewing the staff of market research institutions.

WHO SHOULD PRODUCE THE SEED?

Decide how much of the output is to be produced by the group members and how much by contract farmers. A third option is to produce seed yourself using hired labour and other services, but the costs can become prohibitive.

If you decide to use **contract farmers**, select the farmers with great care. Look for characteristics such as trustworthiness, honesty, experience, knowledge of agriculture and willingness to follow advice. Using contract farmers has **advantages**:

- Increased seed production if the individual land holdings of group members are small.
- Involvement of other farmers in the enterprise.
- Opportunity to focus on quality and seed-specific post-harvest issues while others deal with the day-to-day concerns of crop husbandry.

However, there may be **risks** associated with contract production. If farmers do not adhere to the terms of the contract, the enterprise could suffer significant financial loss. It is important to organize meetings to select the best farmers as contract seed growers.

HOW DO YOU ENSURE APPLICATION OF GOOD AGRICULTURAL PRACTICES?

Seed production follows the normal agronomic practices required for growing any good crop. To grow a crop specifically for the purpose of seed, additional specialized activities are necessary:

notes

- Select sites that have been either under fallow or under rotation with other crops. This ensures reduced incidence of volunteer plants, weeds and diseases.
- Meet the isolation requirements, especially for cross-pollinated crops.
- Monitor the contract growers to ensure that they follow best practices: from site selection through seed production to harvesting.
- Maintain the crop with the application of normal agronomic practices: correct seed rate, recommended levels of fertilizer/pesticide, effective weeding and irrigation.
- Carry out proper rogueing to remove off-types of other varieties and crops.
- Keep your field clean. As part of the certification process, independent and official inspectors may inspect your seed plots. They will verify whether the fields meet

Site selection

Meeting to select growers

5

notes

Rogueing

Practical field inspection

Seed harvesting

notes

the minimum standards for the class of seed grown. Only fields meeting these requirements will be approved for harvesting as seed.

- Harvest the crop at the right time, taking care to identify the variety and class of seed.
- Choose a clean area for threshing, whether using manual or mechanical methods. If using a threshing machine, ensure that it is clean (free from seeds from previous operations) and in good working order (so that it does not damage the seed during the threshing operation).
- Put the threshed seed in clean unused bags. Include full details of the seed on the label.
- Maintain the identity of your seed during transportation to the seed-cleaning centre.

Threshing

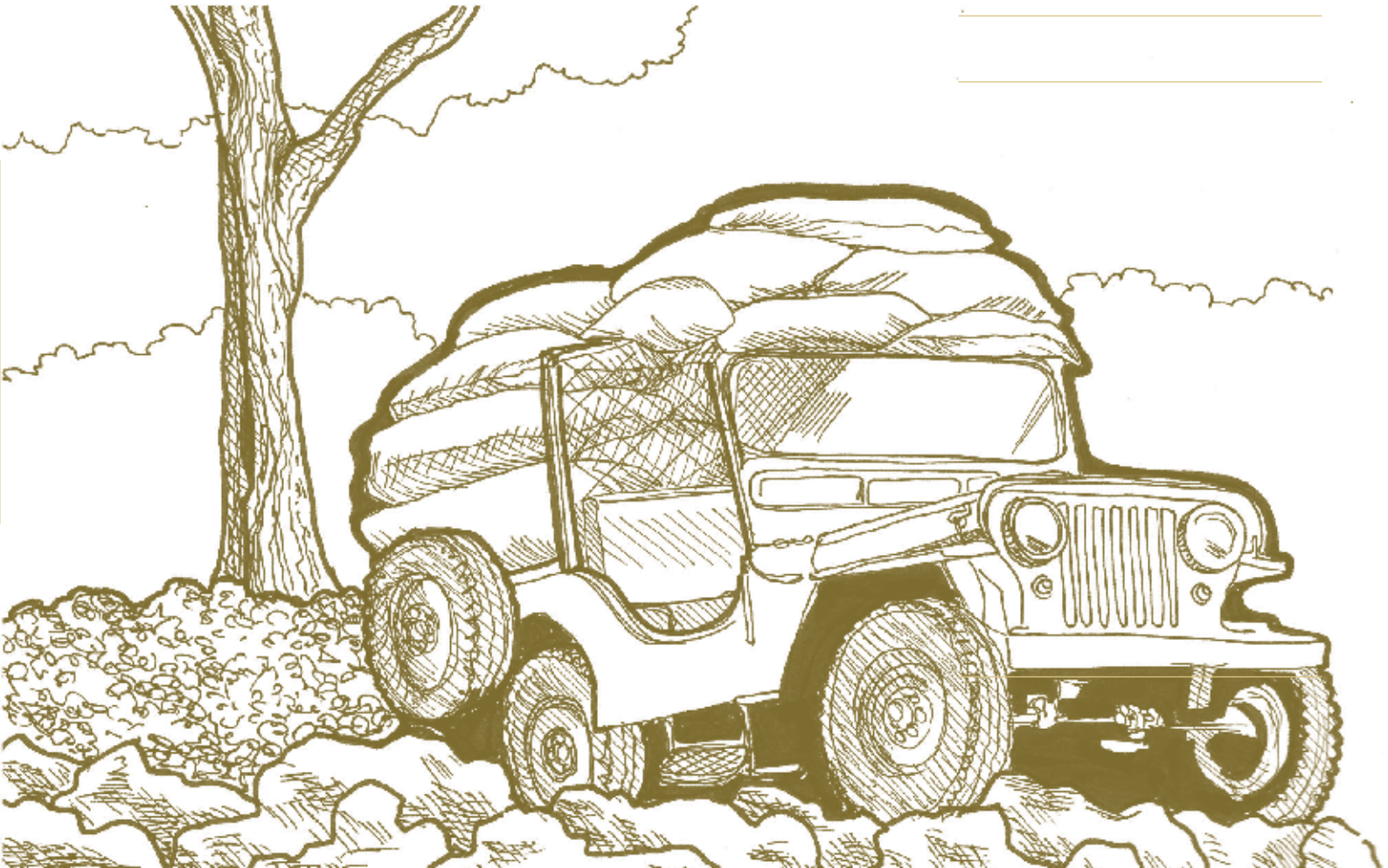
5

notes

EXERCISES AND DISCUSSION POINTS

1. What attributes are the most difficult to find in the local farmers with whom you would like to make contractual arrangements? What are the three most important attributes to look for when selecting growers?
2. Why do you think rogueing off-types is good practice in seed production? What can you do in your area to reduce the quantity of off-types and volunteer plants in seed fields?
3. What threshing methods are used in your community? Which do you think is best for seed production and why?

Transporting raw seed to storage



6 Cleaning, treating, packaging and storing your seed

Cleaning, treating, packaging and storing your seed

6

notes

Cleaning is an important operation that upgrades the physical quality of your seed. Pre-clean your seed on the farm to remove unwanted materials, such as straw and large stones. Put the cleaned raw seed into new bags and label with details of the crop and variety.

Transport the raw seed to the seed-cleaning centre for final cleaning. Use the processing machine to clean your seed and make it physically pure by removing all unwanted materials (seed of other crops, weed seeds, chaff, stones, broken seeds, shrivelled grains etc.). If you do not have your own processing facility, a charge may be applicable for seed cleaning. However – especially in the early stages of your enterprise – this could still be cheaper than having your own facility.

If required, use suitable **chemical treatment** against seed-borne diseases and pests. Seed treatment has important benefits, but only use when necessary and always apply safe practices:

- Take care during handling (the chemicals used could be dangerous to human health and animals).
- Use only chemicals registered nationally as seed treatment products.
- Apply the correct dosage and concentration.
- Provide a clear warning on the bags against using the seed for human consumption or as animal feed.

Labelled bags of raw seed

notes

Place the processed seed in bags, seal them and label them with full details of the seed. Include the same information inside each bag for a particular seed lot.

The seed must undergo **testing** (see Chapter 7):

- Prepare small batches suitable for sampling and fumigation.
- Request that the quality control department collect representative primary samples from your seed lots and submit these for testing.
- Attach official certification tags (issued by the laboratory or certification agency for lots that meet minimum quality standards) to each bag of certified seed. The tags should include details of the seed: name of crop, variety, lot number, class of seed and date of certification.

Seed processing

Processed seed in a store

6

Important: Do not distribute your seed until the test results are available.

notes

Store your seed properly and under good conditions until it reaches the farmer for sowing. Adopt proper **storage** practices, for example:

- Use wooden pallets to keep the seed from direct contact with the floor.
- Keep the seed away from the walls and ceiling to allow easy inspection and control.
- Do not store seed and fertilizer in close proximity with each other.

Inspect seed lots periodically and fumigate against storage pests when necessary.

Seed sampling

Checking seed inventory

notes

EXERCISES AND DISCUSSION POINTS

1. Which seed-cleaning method seems most suited to your enterprise? What are the advantages of this method?
2. How can you ensure that your seed lots are sampled and tested in time to be sold to farmers? How can you ensure that the seed samples of different sized lots (e.g. small: 5 tonnes, large: 10 tonnes) are equally reliable and representative?
3. Which would you prefer: to treat all seed at the processing point or to dispatch the seed with separate packs of chemicals for the farmer to treat the seed on site? Give reasons for your answer.
4. What internal quality assurance methods can you adopt to ensure your fields and seeds meet the minimum quality standards?

Fumigation of seeds in store

7 Testing the quality of your seed

Testing the quality of your seed

7

notes

A new enterprise will rarely have its own seed-testing laboratory at the start of the business, due to the expense. It is, therefore, necessary to rely on other organizations (e.g. government, research or education institutions) or well-established seed companies. Fees may be charged for testing services to cover the costs of materials used, staff time, storage of samples etc.

A primary sample is collected in the warehouse and divided randomly using a sample divider to obtain a working sample representative of the seed lot. The working sample is used to carry out the various quality tests in the seed-testing laboratory.

Important tests are carried out once the seed samples reach the laboratory. Tests normally last up to ten days; the results are then made available.
Quality tests establish the following:

- **Moisture content.** The right moisture content is vital for good storability, which in turn depends on the temperature and relative humidity of the surrounding air. The safe moisture limit varies according to the type of crop. For example, cereal crops generally have higher seed moisture content than oil seed crops for a given relative humidity. The maximum seed moisture content range for many vegetable seeds stored in sealed containers is normally 5–8%, while the optimum moisture content for wheat and rice seed is 10–12%. High moisture content can cause rapid deterioration of the seed; low moisture content can result in mechanical damage to the seed.

Testing seed for moisture content

notes

- **Purity**. Tests are carried out on clean seed to ensure that it is true-to-type or pure seed of the same crop and variety.
- **Health**. It is important to ascertain that the product you sell is free from seed-borne diseases.
- **Germination**. Tests are carried out to check that the seed will germinate and grow well in the field.

Laboratory technician performing purity analysis

Laboratory technician testing seed health

Laboratory testing for germination

7

Seed testing is normally done by an external/official laboratory. A quality certificate is issued upon successful completion of the tests. According to requirements, the certificate indicates for each lot: moisture content, physical purity, varietal purity and health status.

The laboratory or agency issues a certification tag to be attached to all seed lots that have passed the quality tests.

Once the test results arrive, dispatch for sale only those lots that have certification tags. Timely release of the results by the testing laboratory is of the utmost importance.

notes

Farmer displaying a seed test certificate

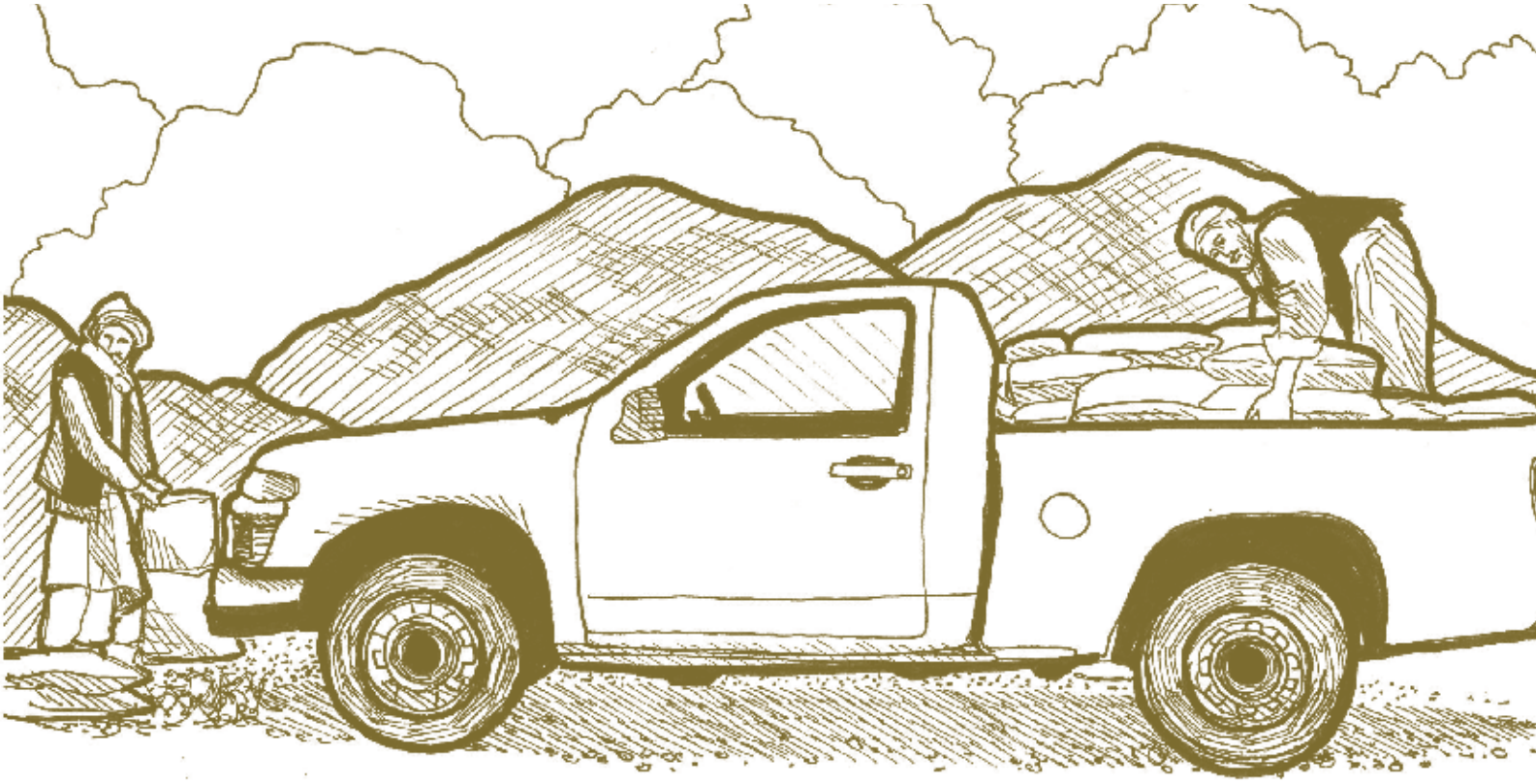
Seed bags with certification tags

notes

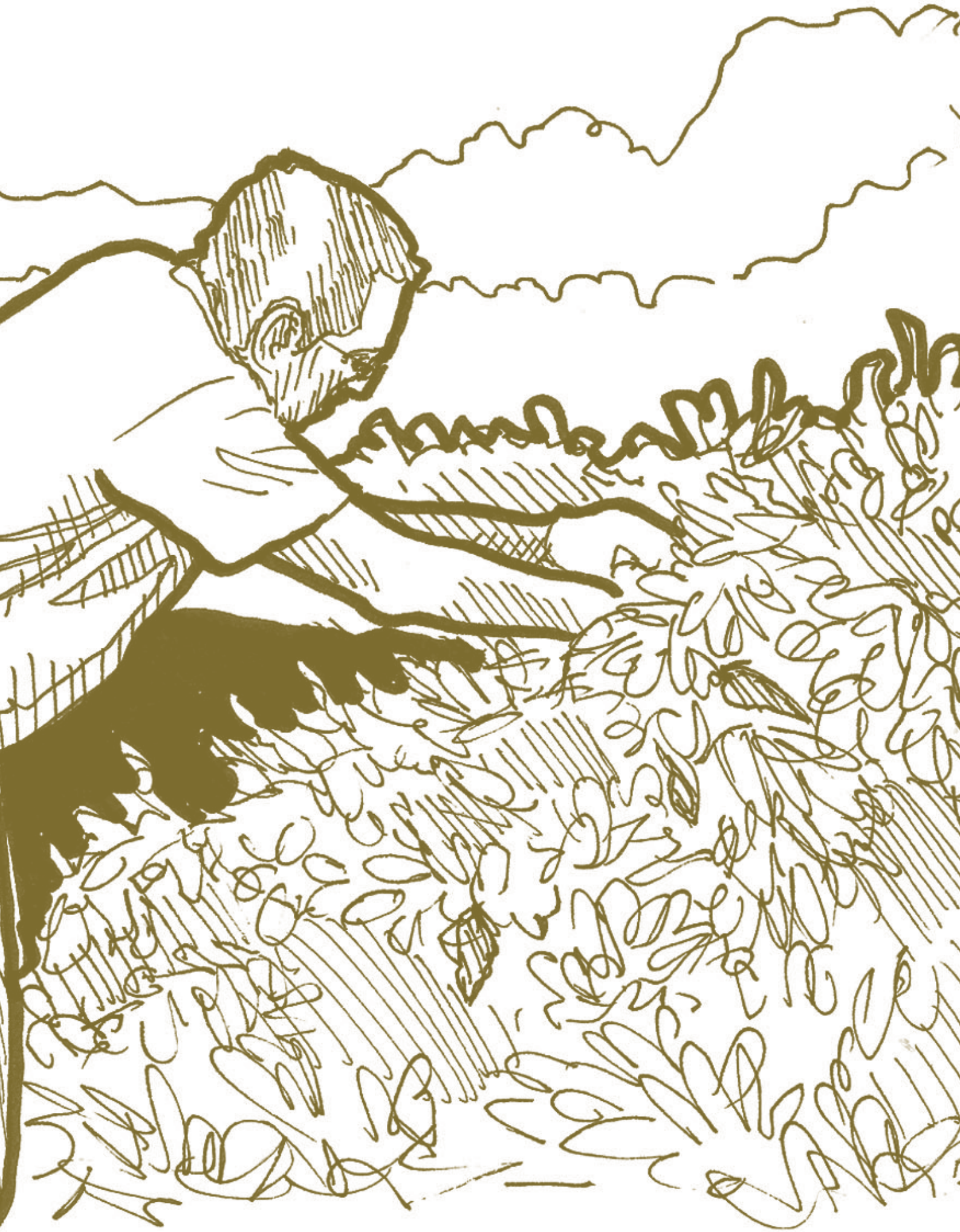
EXERCISES AND DISCUSSION POINTS

1. Which quality standard do you consider the most difficult to meet and why? If a seed lot were rejected, what would you do with it?
2. Is it better to check the genetic purity of your seed in the laboratory or in the field? Explain your answer.
3. Why is it important to wait for the results from the laboratory before dispatching seed to customers?

Transporting processed seed to market



⑧ Promoting and selling your seed



Promoting and selling your seed

8

notes

For your enterprise to succeed, you must sell all the seed you produce each season. This requires an excellent understanding of the crops and varieties that farmers desire and of the quantity of seed they need.

Acquire this information in advance and use it to make your production plan, as the enterprise should produce seed in line with real market demand. Liaise closely with extension services and development projects – they can provide vital support.

For good **seed sales**, carry out the following activities:

- Promote your varieties and seed at field days and on-farm demonstrations.
- Participate in agricultural fairs, meetings or conferences, and create displays (e.g. attractive posters and seed samples). Talk to participants and hand out brochures and your business card.
- Distribute your seed through sales agents located in places frequented by farmers (e.g. markets and bazaars). Ensure that your agents are knowledgeable about seed production, handling and management so that they can give appropriate extension advice.
- Endeavour to sell your seed together with related inputs and other items that farmers need (e.g. fertilizer, pesticide, herbicide and hand tools). Farmers prefer to purchase as many inputs as possible from one source.
- Find out the prevailing market prices for grain and seed of your crop.

Seed fair

notes

WHAT IS THE RIGHT SELLING PRICE?

There are two main methods for deciding the right price to sell:

1. Base the selling price on your costs. You must know the total costs and the cost breakdown, understanding how particular costs are incurred and how you can influence them. You may then add a reasonable profit margin to the total cost to fix the selling price. This is the "cost plus" pricing method.
2. Base the selling price on what the farmer can afford and is willing to pay for quality seed. You need to know the prices other producers are charging for the same kind of seed.

Ideally, adopt a **combination of both methods**: calculate your full costs and have a good understanding of the market conditions prevailing.

If contract growers are your main source of seed, procuring seed will be the greatest cost incurred by the enterprise. You must have sufficient funds available at the right time to buy raw seed from your growers at the right price.

At a dealer's shop

HOW DO YOU GUARANTEE A PROFIT?

The money obtained from sales must be more than the total cost of producing and selling the seed. Avoid carryover of unsold seed from one season to another: the quality of such seed may decrease and its value and price fall, resulting in reduced profit. However, some carryover seed is almost inevitable. Therefore, take measures to maximize profitability:

- Monitor stored seed to ensure that it keeps its quality and can be sold at a profitable price the following season.
- Consider selling seed as food grain to avoid paying for storage (only feasible if the carryover seed is untreated).

Agricultural inputs shop

Conducting market research

8

notes

The enterprise should aim for a profit margin that will ensure the business continues to survive while selling the seed at a competitive rate. In order to **guarantee a profit**, take the following measures:

- Begin the season with a full store (in line with projected demand).
- Sell your seed at a good price that farmers can afford and are willing to pay.
- End the season with an empty store (at least, aim for empty).
- Keep accurate financial records and be fully acquainted with your expenses, expected income and potential profit level.
- Provide good after-sale service.

After-sale service

Quality, price and service are key factors in the success of any seed enterprise. Ensure from the outset that **customer service** following the sale of the seed is an **integral part** of your company's marketing strategy.

Good service can be the foundation of business growth and it begins with timely delivery of quality seed at an acceptable price. It is essential to continue to care for customers by also providing **after-sale service**:

- Deal efficiently with complaints.
- Provide advice where necessary.
- Request feedback on the seed's performance.
- Maintain customer loyalty.

SHOULD YOU SELL SEEDS ON CREDIT?

It is not unusual for farmers to ask for seed on credit. Even if the enterprise has a policy of cash sales only, the reality is that some flexibility may be required, despite the risk of debts that this entails.

A seed store

notes

EXERCISES AND DISCUSSION POINTS

1. If 1 tonne of wheat seed costs $200 to produce, what will be your selling price if you intend to make a 15% profit margin?
2. What promotional methods can you use for the various categories of customer in your community?
3. Why is it essential to have enough cash at the right time to procure raw seed from your contract growers? How could you raise this money?
4. Why is it necessary to avoid significant carryover of seed from one season to the next? How can you organize your seed business to avoid carryover of seed?

Selling seed to farmers

Empty seed store

⑨ Managing your seed enterprise

Managing your seed enterprise

9

notes

Good management is essential for any business. In a group enterprise, good management depends on the following:

- **Competence and dedication** of the group of people who form the enterprise.
- **Internal organization** of the group members – they must be able to undertake the various tasks and work together efficiently.
- **Efficiency** in running financial affairs.
- **Monitoring** and **evaluation** of business success.

INTERNAL ORGANIZATIONAL ARRANGEMENTS, LEADERSHIP AND TEAMWORK

To design an organizational structure for a seed enterprise, group the various activities or tasks into distinct categories based on function; these are then classified as divisions. For example, the Production Division would include contract management, seed multiplication, seed cleaning and seed storage, while the Marketing Division would include promotion and sales.

Share essential functions and responsibilities among the members of the group on the basis of capability and interest. If the group members do not cover all essential skills, consider hiring and paying for qualified staff.

Someone must be responsible for each activity in the enterprise. That person will implement or supervise the tasks required and report on them. It is important that everyone in the enterprise understands the respective responsibilities and duties of the members. Whoever is in charge of an activity must have the authority to carry out the necessary functions – in consultation with other members when necessary.

If possible, there should be an even distribution of tasks and responsibilities (see Figure 1) to avoid overburdening any member(s). This is even more important if members are not paid directly for the tasks they perform. Cooperation among the group members is the key to success. Members must cooperate and share the workload, responsibilities and all information. Casual labour based on seasonal demand may be important for carrying out the day-to-day activities of the enterprise.

If an enterprise is dependent on just a few people to function, it does not have a bright future. The careful distribution of functions among the various members is important for **transparency**, **accountability** and **sustainable management** of the group enterprise. Members should receive training in essential activities so that everyone has a good understanding of everything. Tasks may then be rotated among the members over time. The more people know what is happening in the enterprise, the easier it is to share information, exchange ideas and opinions, and make joint decisions.

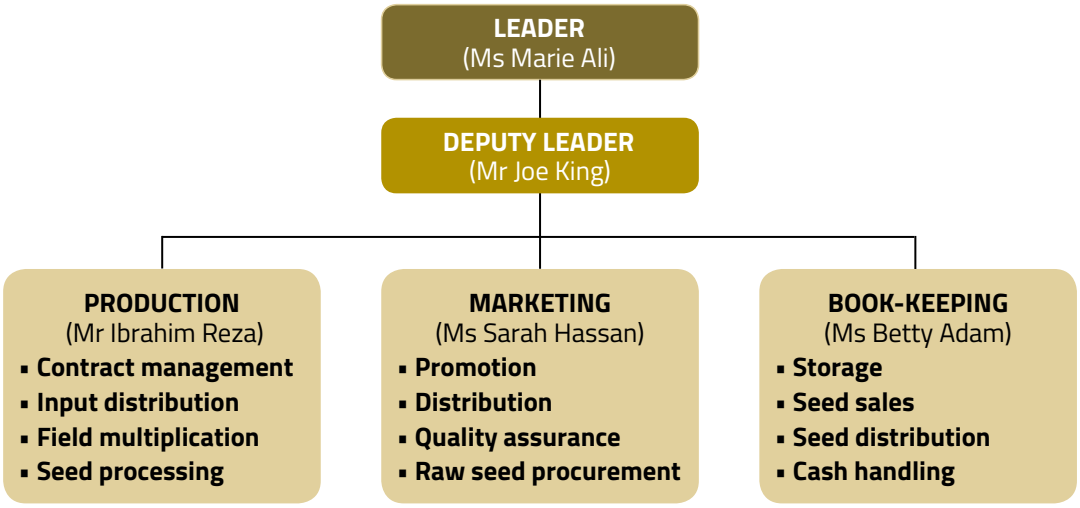


Figure 1. Organizational structure of Best Crop Seeds enterprise

Key tasks often found in a small seed enterprise:
- Organization of contract growers and supply of inputs
- Seed production and extension
- Procurement of raw seed from growers and transportation
- Seed cleaning, packaging and storage
- Quality control
- Marketing and sales
- Book-keeping and accounting

Good **leadership** is essential for a successful seed business. The **role** of the group leader is to:
- promote teamwork and team spirit;
- enhance organizational performance; and
- build trust.

The **group leader** must possess certain essential qualities and skills, including:
- influence, dignity and respect in the community and among group members;
- wisdom, good judgement, ability to instil trust and proficiency in resolving conflict;
- honesty, trustworthiness and reliability;
- knowledge and experience of the various tasks in the enterprise;
- belief in working for the collective benefit of the group enterprise;
- respect for enterprise by-laws;
- transparency and willingness to share information with other members;
- strength (willing to listen to the views of others and to consult them on key decisions);
- ability to accept constructive criticism;
- ambition (pro-active and energetic);
- ability to remain business-oriented and customer-focused;
- commitment to the continued success of the enterprise; and
- readiness to present a good image of the enterprise to outsiders

In summary, the ideal leader of an enterprise must have a combination of business management and sound personal qualities.

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notes

As with any essential task, it is good practice to change the group leader periodically (after a number of years). The enterprise must not become dependent on the direction of one person. The enterprise by-laws should include a provision in this regard.

BUSINESS RECORDS

To run a successful seed business, it is fundamental to prepare and keep accurate and timely financial records.

What is record-keeping?

Record-keeping is the writing down of all transactions in the enterprise involving:

- money coming in;
- money going out; and
- money owed by customers.

Why keep records?

Good records will help you do the following:

- Monitor progress. A clear financial picture is essential for monitoring the progress and success of your enterprise. Records show whether business is improving, which varieties are selling well, and what changes you need to introduce.
- Deal with the bank. Written records are mandatory for obtaining financial assistance from external sources (banks and lending agencies). The bank requires proof of how the business is performing.
- Prepare financial statements. Accurate and complete records enable you to identify your business assets, liabilities, income and expenses. Good records are essential for the preparation of financial statements: income statement (profit and loss), cash-flow projection and balance sheets.

What are the merits of good record-keeping?

The success of your enterprise depends on complete and accurate record-keeping to:

- provide the information needed to make valid decisions;
- help you recall transactions;
- maintain transparency; and
- improve accountability through checking and verification.

Who should prepare and manage financial records?

A certain level of literacy and expertise is required to write proper financial records. Ideally, someone in the enterprise should be responsible for keeping an accurate set of financial records. If there is no one suitable, hire someone from outside with the right skills.

notes

How should you keep your business records?

Find the record-keeping system that works best for your enterprise and meets your business needs. Computers and an appropriate software package may be useful for managing the accounts: establish back-up routines and ensure data security. On the other hand, you may decide to use simple exercise books, keep file folders or buy special accounting books. Below are some suggestions for keeping business records:

- File all business documents in an orderly manner and keep them in a safe place.
- Use folders or files divided into categories or sections related to specific transactions.
- Organize receipts by category and by date.
- Update records on a regular basis.

What kinds of records do you need to keep?

A record-keeping system should be simple to use, easy to understand and accurate. It should provide summaries of business transactions (e.g. items you buy, seeds you sell and people you employ). This information is typically recorded in books called ledgers, which you can buy at local stationery stores. With a ledger, you can keep organized records of all business income and expenses.

You must also preserve all relevant supporting documents and keep them in order (e.g. price quotations, invoices, receipts, sales slips and paid bills). These documents are very important as they support the entries in your ledgers.

Financial records

There are four basic kinds of financial records:

- Cashbook
- Sales ledger
- Purchase ledger
- Wages book

Cashbook (petty cash records)

The cashbook is the final record of all money that comes into and goes out of your business. Use the cashbook on a daily basis for every transaction, listing everything your business buys or sells whether for cash or credit.

You should keep written evidence of all transactions. The cashbook also contains documents including:

- bank paying-in book;
- bank statements;
- copies of invoices issued by the enterprise;
- suppliers' invoices; and
- receipts of all cash purchases.

There must be separate records of all **money coming** in (receipts or sales) and all **money going out** (payments or purchases).

9

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Example of a cashbook:

Date [Day you received or paid out money]	**Explanation** [Where money came from or what money was spent on]	**To/from** [Who paid/ received money]	**Money in** [Quantity of cash received] [$]	**Money out** [Quantity of cash disbursed] [$]	**Balance** [Cash balance] [$]
1 January					10 000
1 January	100 bags NPK fert. @ $10/bag	Ag Depot		1 000	9 000
15 January	100 bags Urea fert. @ $10/bag	Ag Depot		1 000	8 000
20 January	Sold 10 tonnes seed @ $300/ tonne	University	3 000		11 000
5 February	Sold 20 tonnes seed @ $300/ tonne	High school	6 000		17 000
8 February	5 reams paper @ $20/ream	City store		100	16 900
10 February	20 worker days @ $5/person/day	Workers		100	16 800
20 February	Sold 1 tonne seed @ $300/tonne	Tom (farmer)	300		17 100
TOTALS			**9 300**	**2 200**	**17 100**

The cashbook alone may be sufficient for many small businesses. However, keeping additional records (sales ledger, purchase ledger and wages book) may make it easier to monitor your cash flow.

Sales ledger

Enter all sales whether or not the customer has actually paid. Whenever a customer takes seed and you issue an invoice, record it in the sales ledger. If a customer actually pays for the seed and a receipt is issued, enter the payment in the sales ledger together with the number of the receipt (stamped as "paid"). Record the income (amount of money) in the cashbook.

The sales ledger is a useful business monitoring tool. It helps you to trace transactions and reminds you about debtors who have taken seed on credit and still need to pay. Periodically (e.g. each week) add up the total amount of money owed to the business. Send a reminder to customers who have exceeded the time limit for payment. All customers owing money should remain on the sales ledger until their debts have been cleared. The sales ledger helps keep track of fast-paying and loyal customers. To support the sales ledger, retain copies of all invoices and receipts: file them in order and keep them in a safe place.

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Example of a sales ledger:

Date of invoice	Name of buyer	Description of sale	Invoice number	Amount ($)	Date invoice paid
20 January	University	10 tonnes seed @ $300/ tonne		3 000	20 January
5 February	High school	20 tonnes seed @ $300/ tonne		6 000	5 February
20 February	Tom (farmer)	1 tonne seed @ $300/ tonne		300	20 February
27 February	Abdul (farmer)	2 tonnes seed @ $300/ tonne		600	
TOTAL				**9 900**	

Purchase ledger

The purchase ledger is the mirror image of the sales ledger. Enter all payments to be made against the invoices sent to you by your suppliers, whether or not you have paid for them.

When you pay a supplier's bill, enter the payment in the purchase ledger, mark the supplier's invoice "paid" and enter the payment in the cashbook.

The purchase ledger provides a reminder of how much you owe to which suppliers at any one time. Any supplier owed money should remain on the purchase ledger until payment has been made. Each time you make a payment, note the payment in the "Date invoice paid" column. The purchase ledger provides a record of your most regular suppliers and how much you have spent with them.

Example of a purchase ledger:

Date invoice received	Name of supplier	Description of purchase	Invoice number	Amount ($)	Date
1 January	Ag Depot	100 bags NPK fert. @ $10/bag		1 000	1 January
15 January	Ag Depot	100 bags Urea fert. @ $10/bag		1 000	15 January
8 February	City store	15 reams paper @ $20/ream		300	8 February
TOTAL				**2 300**	

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Wages book (if you employ workers)
If your enterprise employs anyone, keep a record in the wages book of all wage and salary payments made, including any allowances. A detailed record of payments will help you answer any financial queries raised by workers.

The wages book lists all workers, the number of days worked, how much you pay per person per day, and the total amount paid to each worker in a given period. The information is useful for appreciating the correlation between your labour expenses and needs; it will help in planning labour requirements.

Example of a wages book:

Period:1–10 February

	Name of worker	Job	Days worked	Pay per	Amount ($)
1	Peter Smith	Book-keeping	10	5	50
2	Mary Long	Quality assurance	10	5	50
	TOTAL		**20**	**5**	**100**

Other records worth keeping

The organization of transactions varies from one enterprise to another, but you may need to keep additional records (described below).

Stock or inventory record
The inventory record or ledger registers the seed (type and quantity) in stock and its cash value. It is useful for verifying any changes made to your inventory. You can check the date, type and volume of any movement, the store receipt or issue number, the total balance remaining in the store and its monetary value. A store receipt or issue voucher supports each entry in the inventory ledger; it is important to retain it for checks and verification.

Example of an inventory record:

BIN CARD Crop:_____

Variety:_____ Bag size (kg): _____

Date	Receipt or issue voucher number	Received (bag)	Issued (bag)	Balance (bag)
15/6/15	001	100	-	100
20/6/15	002	800	-	900
22/6/15	005	-	500	400
30/6/15	003	1 000	-	1 400
1/7/15	006	-	200	1 200

notes

Fixed asset register

It is good practice to keep a record of fixed assets acquired by the enterprise, making a note of the purchase details.

Example of a fixed asset register:

Description	Item number	Date purchased	Purchase value	Remarks
Tractor	001	1 Jan.	10 300	New
Thresher	002	1 Jan.	200	Used
Seed drill	003	1 Jan.	500	New
Seed cleaner	004	1 Jan.	80 000	New
Transport van	005	1 Jan.	10 000	Used

Motor vehicle logbooks

A motor vehicle logbook identifies business and private trips including the distance (km) travelled and destination. For transportation, enter in the log-book details of the goods (e.g. number of bags of a particular seed or fertilizer carried) and the quantity (litres) of fuel or lubricant purchased. With a well-kept logbook, it is possible to determine the proportion of business expenses incurred by vehicle use and transportation.

Example of a vehicle logbook:

Date	Location		Purpose	Km			Load	Fuel		Signature
	From	To		Start	End	Total		Litre	Total cost ($)	
15/7/15	A	B	Sales mission	15 000	15 200	200	50 bags cleaned wheat seed	100	350	
16/7/15	C	D	Sales mission	15 200	15 600	400	20 bags cleaned wheat seed	0	0	
17/7/15	D	A	Raw seed transport	15 600	16 200	600	40 bags raw wheat seed	20	70	

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MANAGEMENT OF FINANCIAL RESOURCES

Effective management of the enterprise's financial resources depends on how you:
- acquire and use financial resources;
- protect financial contributions from risk;
- evaluate new investment opportunities; and
- follow up changes in the financial environment (including policy changes).

The enterprise must prepare financial statements, including:
- profit and loss account (income statement); and
- balance sheet (opening and closing balance sheets to reveal levels and changes in assets and liabilities).

FINANCIAL STATEMENTS

Financial statements provide indicators to assess the performance of your enterprise:
- Profitability – efficiency in using resources to generate net profit or net income.
- Liquidity – ability to meet financial obligations without disrupting normal business (e.g. having sufficient working capital or money to buy inputs and inventory once short-term obligations are met).
- Solvency – ability to cover financial obligations if all assets are sold.

USE OF CASH FLOW

The cash obtained from seed operations can be used to:
- pay outstanding debts;
- pay taxes due; and
- distribute dividends to enterprise members.

Alternatively, cash may be:
- kept as profit; or
- saved for re-investment.

It is important to maintain some cash in your seed enterprise. You need to be able to pay for ongoing transactions (including debt due) and meet unexpected disbursements.

Good **cash flow management** practices:
- Speed up cash inflows whenever possible.
- Delay paying cash obligations until they are due.
- Invest surplus cash to earn a rate of return.
- Borrow cash (when necessary) on the best possible terms.
- Maintain an optimal level of cash (not too much, not too little).

notes

- Keep a flexible workforce (engage temporary workers as necessary rather than full-time staff).
- Maintain flexible purchasing practices (e.g. rent – don't buy – items as needed, or order items out of season when prices are low).
- Liquidate inventory that is not moving (to avoid storage costs or the risk of deterioration in quality).

PERFORMANCE MONITORING AND EVALUATION

Prepare projections for income, expenditure and cash flow and use them on a regular basis to manage your business.

Plan ahead and regularly monitor key performance indicators: volume of unsold seed stock, level of sales, pattern or regularity of sales, quality status of seed, magnitude of fixed costs, amount of cash owed by customers, and magnitude of profit or net margin.

Evaluate whether achievements are in line with planned targets. You must be able to explain any deviations from your planned performance targets and be in a position to take corrective action if necessary. The table below shows potential problems and possible corrective responses.

PROBLEM	CORRECTIVE ACTION
Net margin becoming too small	Review any discounts offered to customers
Demand rising for a particular variety	Devote more land and resources to that variety
Cash flow not meeting costs	Chase up customers with high debts
Proportion of fixed costs rising	Check whether all fixed cost items are actually necessary

To take appropriate action, you need timely access to appropriate and accurate information. Regular monitoring and evaluation can help identify the strengths and weaknesses of your enterprise. To evaluate success, you must be able to show that your enterprise has been making improvements over time. For example, steady growth in volume of sales and margins, and improvement in seed quality can be clear indicators of business success.

Formulate a work plan before the start of each cropping season. Use the plan as a guide in regular monitoring.

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Sample plan

ACTIVITY	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Land preparation												
Sowing												
Harvesting and threshing												
Field inspection												
Seed procurement from growers												
Processing and storage												
Seed testing and certification												
Field days												
Seed marketing												
Training and planning												

EXERCISES AND DISCUSSION POINTS

1. Make a sketch of the organizational structure of your seed enterprise and specify the functions of the various members. Do you think this structure is suitable for your enterprise? Would you prefer another structure? If so, which and why?

2. Do you think it is a good idea to change periodically the group leader of your enterprise? Give your reasons.

3. Specify which business record is used to verify the following:
   – all money coming in and going out of the business;
   – the quantity of seed in store on a given date;
   – customers that owe money for seed they have taken on credit;
   – suppliers that you owe money to at a given time;
   – the quantity of private goods transported and the distance travelled;
   – the number of tractors you have and their purchase price.

4. Design a year work plan for your enterprise for the most important crop. What would you do during the period when your enterprise is least busy?

⑩ Looking to the future

Looking to the future

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notes

Ask yourself critical questions, such as "Where would I like my seed enterprise to be three or five years from now?" and "What do I want to be doing by then?" Attempting to answer these questions will help you look to the future and see how your short-term plans fit into your longer-term view.

When you start a new seed enterprise, you want to see it survive and flourish. Remember that an enterprise needs time to grow –like seed planted in the ground. Prepare the soil and make sure the conditions are right before you plant the seed. Once planted, do not expect it to produce a crop the next day. Give it water and nutrients at the right times. Watch and nurture it as it grows steadily. Then, and only then, can you harvest your crop and reap the benefits.

The growth of your seed enterprise follows a similar pattern. Exercise **patience** during the "planting", "watering" and "fertilizing" stages – your hard work will eventually be rewarded with a good crop. You cannot rush the gradual process of business development.

Seedling growth stages

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KEY STAGES IN THE GROWTH OF A SEED ENTERPRISE

STAGE 1: Start-up

Key characteristics

Following careful thought, you have started your enterprise. It is registered and exists legally as a private enterprise. You have selected your growers and they have begun seed production on their farms. However, you have not yet sold any seed, and for your cash needs you depend on money contributed by members, loans given by banks, or grants from aid agencies.

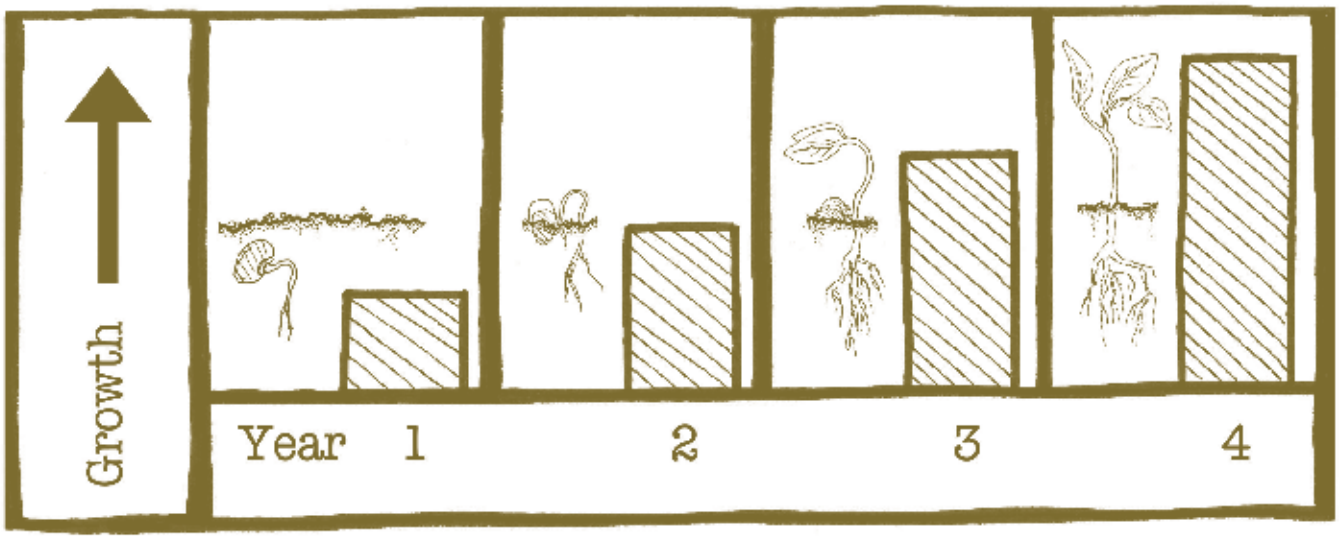
Action

- Decide on your organizational structure.
- Find professional advisors.
- Do comprehensive business planning.
- Identify potential customers and establish a customer base or niche market.
- Make your presence felt in the marketplace through promotional activities.

Challenges

- Conserve your cash flow and do not waste what little cash you have.
- Be realistic about what you do.
- Keep checking that your business is on track.

Bar chart of seed enterprise growth stages



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STAGE 2: Survival

Key characteristics

Your business has made it through the first few years. Your revenue is increasing steadily and your customer base is growing. Profits are still small but there are new opportunities to explore.

Action

- Build on your success so far.
- Seek a larger market share for your seed.
- Use appropriate marketing strategies to reach your customers: to survive, you need revenue; to obtain revenue, you need customers; to convince customers to purchase your seed, you need to market your product.
- Maximize revenues by collecting payments in a timely and efficient manner to improve cash flow.

Challenges

- Beware that many enterprises fail due to cash flow problems when future revenues cannot offset expected expenditures.
- Collect outstanding payments as quickly and as effectively as possible.
- Offer different options (e.g. bigger and more reliable customers can pay by cheque or bank transfer; smaller customers may prefer to pay cash).

STAGE 3: Growth

Key characteristics

Your enterprise is now established: it is doing well and has its place in the market with loyal customers. Your seed sales are growing. Opportunities are becoming available for additional funds (e.g. joint ventures, banks, and new partners or members).

Action

- Diversify into new crops so that your business can expand (new markets and different customer types).
- Establish new distribution channels as you move into new markets.
- Consider drawing up a new business plan (effective management is crucial at this stage).
- Hire new staff and provide training.
- Set up better accounting and management systems.
- Run your enterprise in a more formal way in order to deal with increasing volume of sales and growing number of customers.

notes

Challenges

- Watch out for new competitors, stay focused and look for new opportunities.
- Anticipate the changing needs of your customers: adapt to make sure you are not caught off guard and driven out of business.
- Adopt improved business practices and employ skilled staff to compete in an established market and improve your productivity level.

Maintaining growth

A successful enterprise maintains steady seed sales and positive cash flow. Nevertheless, it is important to move forward and reach new customers and new markets. Strengthen your marketing position to optimize opportunities for expansion. Use marketing tools, such as diversification (new products), competitive pricing, expanded channels of distribution and targeted promotional campaigns.

Strategies for expansion

Business expansion means exposing your business to more customers. Choose the expansion method that best fits the strengths and weaknesses of your group and takes into account the limitations of existing resources (including cash). Four **expansion strategies** are summarized below.

	PRESENT MARKET OF FARMERS	NEW MARKET OF FARMERS
SEED OF PRESENT CROP	1. Market penetration	2. Market development
SEED OF NEW CROP OR ANY RELATED PRODUCT	3. Product development	4. Diversification

Taking seed home from the local market

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1. Market penetration

You are looking to increase sales within your current market. The objective is to sell more. You need to get your current customers (farmers) to buy your seed more frequently, also by attracting customers away from competitors. Market penetration methods:

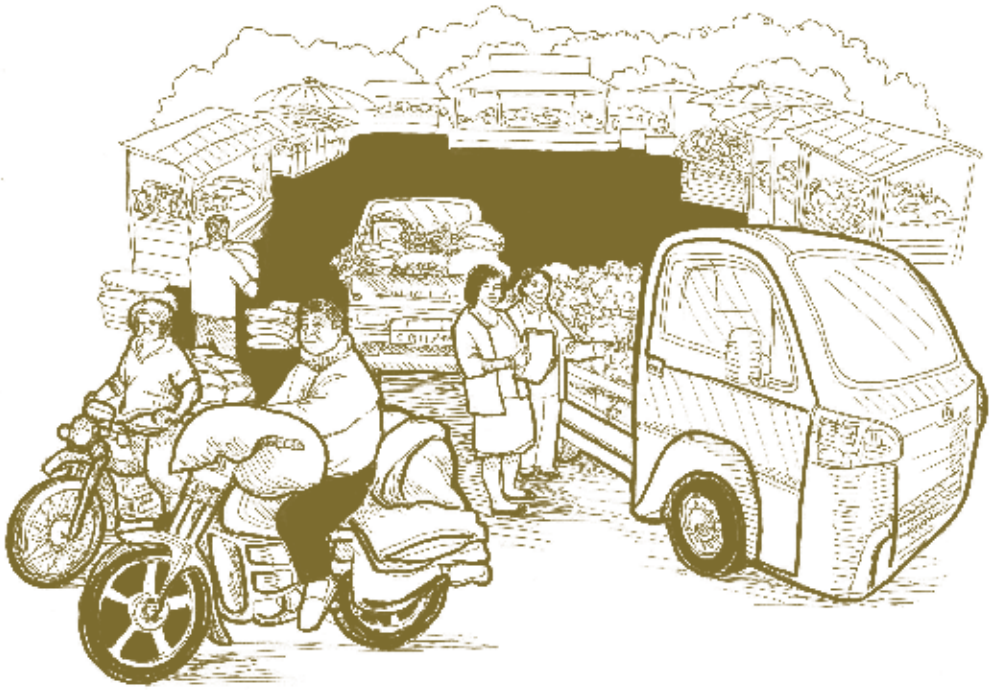
- Promote new end uses of varieties (e.g. value-added food processing).
- Increase availability of varieties or seed (e.g. improved delivery systems).
- Make seed more competitive (price and quality).

2. Market development

You are looking to sell seed in new markets. The aim of market development is to reach new customers and you must go beyond your current sales area. Market development methods:

- Use dealers further afield (e.g. if sales are limited to the local village bazaar, send your seed to dealers in surrounding villages).
- Adopt new marketing methods (e.g. use additional sales agents to increase your total volume of sales – but note that you would need to accept a lower sales margin).
- Implement market segmentation: target your seed towards a specific group of buyers within your new market area.

With **market segmentation**, divide your seed market into distinct groups of buyers with specific requirements (e.g. seed of certain varieties or special delivery methods). You must first understand how the perceptions, preferences and characteristics of buyers differ across farmer groups.



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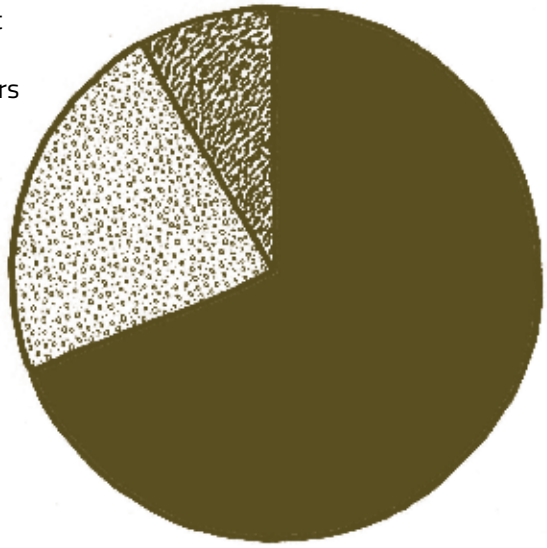
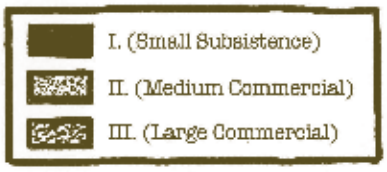
For example, the chart below shows market segmentation in a community of farmers buying wheat seed:





Characteristics	Segment I	Segment II	Segment III
Main Benefits Sought	- Cheap seed - Source nearby - Credit for seed and other inputs	- Responsible price - Seed anywhere - Inputs available for cash purchases	- Price not important - Seed anywhere - Want only seed, has other inputs
Purchasing Power	Weak	Reasonable	Good

Different market segments

3. Product development

You are looking to offer seed of a new crop or another related product (e.g. agrichemicals). There is a **risk** that farmers will not be interested in your new product; they may prefer the product they are used to.

4. Diversification

You are looking to move your business in a different direction. This method carries the greatest **risk**, since it involves dealing with a new crop or product, as well as new markets. Initially, you may lack the necessary in-depth knowledge and experience, resulting in uncertainty. Nevertheless, diversification is essential in order to balance cash flow and increase contact with farmers.

The alternative – dependence on seeds of just one or two crops – also involves risk. Diversification into related products is an important move – it makes you less dependent on seeds and can provide financial security. Diversification methods:

- Sell packets of vegetable seeds, small tools or simple equipment.
- Provide a tractor hire service for land preparation.
- Offer a grain-cleaning service to farmers (if you have invested in a seed-cleaning machine).

In conclusion, in the early stages of your enterprise, attempt market penetration and development. As you gain experience and become more confident, look to other expansion opportunities involving product development and diversification.

JOIN FORCES FOR SURVIVAL AND GROWTH

There is strength in numbers: it is a good idea to join forces with other thriving seed enterprises (at local or national level). You could join a seed producers' association (or form one). Within an association, the members share common interests and can help each other survive and grow.
Associations offer numerous **benefits**:

- Marketing support (networking, attracting additional customers).
- Provision of services (business education and training opportunities through workshops, conferences and trade shows).
- Advocacy to help remove barriers in situations where inappropriate laws and regulations make it difficult for seed enterprises to survive and prosper.

notes

National associations that **advocate** effectively do the following:

- Express members' concerns in a unified voice to attract the prompt attention of policy-makers.
- Maintain close working relationships with government authorities.
- Communicate effectively with policy-makers to influence laws and policy proposals in the interest of their members.

Collective action may be the key to business survival, growth and prosperity. Individual enterprises can rely on the advocacy power of their association to improve the business climate, access relevant information, and protect against external forces that may act as barriers to business development.

Forming a seed association

Seed associations can exist at different levels: regional, national and international. Seed associations representing different regions of a country may all be members of one national seed association, which in turn could belong to a broader international association, such as the African Seed Trade Association (AFSTA) or the Asia and Pacific Seed Association (APSA).

There follows an example of how to form a seed association at regional level, from the sharing of ideas in a small group through to the formation of a formal organization guided by legally binding rules and regulations.

Offering products in markets

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Step 1. Hold an initial informal meeting to share ideas

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Convene a preliminary meeting with a small group of key interested producers. Discuss openly the need for and advantages of an association, allowing everyone to express their views. If there is sufficient interest, arrange a second meeting and invite representatives from all seed enterprises in your region.

Step 2. Select a provisional committee to prepare by-laws and guidelines

Organize a more structured meeting and encourage all persons present to participate actively. Consider inviting an experienced outside person (e.g. extension agent or agency officer) to chair and guide discussions. The main outcome should be the election of a provisional management or steering committee (of approximately seven members) to develop by-laws and guidelines for the proposed association based on consensus. Convene a meeting of the provisional committee to prepare draft terms (e.g. based on the existing by-laws of the various enterprises).

Step 3. Hold an organizing meeting to finalize the by-laws

Promote attendance at the organizing meeting by combining it with an attractive educational programme (e.g. field day). Discuss, amend and finalize the proposed by-laws and guidelines, and agree on membership fees.

Advocacy action by members of seed association

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Step 4. Register the association

Once the by-laws are agreed, register the seed association with the relevant national authorities. Organize an inaugural meeting.

Step 5. Hold an inaugural meeting

At the inaugural meeting, the provisional management committee presents a report on all its activities and the members resign their positions. The inaugural meeting approves and accepts the draft by-laws. It then elects its first management or executive committee members as specified in the by-laws.

Step 6. Plan activities for the first year

The association's activities in its first year may include:

- effective communication through a newsletter and press releases;
- membership drive and awareness-raising;
- periodic management or executive committee meetings; and
- an annual general meeting.

With time, seed associations will shape the future of the seed industry. Stakeholders – including seed producers, dealers, farmers and policy-makers – will gradually become involved with these associations at regional and national level.

Initial meeting of seed association

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EXERCISES AND DISCUSSION POINTS

1. Do you think your company will survive and do well in the long term if it sells seed to all categories of customer at the same price? Explain your answer and show which pricing strategy you think would work best in your community.

2. How many years do you think your enterprise will take to go through each of the three stages: start-up, survival and growth? Explain and give reasons for your answer.

3. Might your enterprise like to join forces with other producers in the region to form an association? What are the advantages and disadvantages of belonging to such an association?

Inaugural meeting of seed association

Summary and conclusions

notes

Agriculture needs quality seeds of good crop varieties in order to thrive. Seed enterprises can make these seeds available to farmers. If an enterprise wishes to successfully produce and market quality seed to farmers and make money, it must do the following:

- Bring together disciplined hardworking enterprise members with talent and good skills.
- Make a good business plan.
- Select crops and varieties that farmers require and for which they are willing to buy quality seed.
- Adopt effective planning, careful preparation and good organization.
- Understand and use cost-effective methods to sell seed at competitive prices and generate reasonable profit.
- Follow strict quality assurance procedures to produce the best seed possible.
- Promote its operations vigorously and maintain good after-sale service.
- Implement effective organization, leadership and teamwork strategies, and keep accurate business records.
- Look to the future with optimism and exercise patience while the business gradually reaches full maturity.
- Join forces with other enterprise groups to gain strength in numbers and increase bargaining power.

The best enterprises will survive. They will sometimes absorb the weaker ones to grow and shape the future of the seed industry and agriculture in the country.

Glossary

Asset
Anything of value owned by a business.

Balance sheet
A summary table of the assets and liabilities of a business at a specific point in time, usually the last day of the financial year. In the balance sheet, the total value of assets must equal the total value of liabilities.

Break-even analysis
An analysis of the relationship between total cost and total revenue. Break-even is achieved when total cost equals total revenue.

Breeder seed
The seed of varieties produced by research stations. It is cultivated to produce foundation or basic seed, i.e. the first generation generally made available for multiplication by the commercial sector.

Capital
Investments in capital goods (e.g. machinery, equipment and buildings) and human capital (e.g. education and training) used to contribute to production activities, including money secured by the business as a loan.

Cash flow
Movement of funds in a business in the form of receipts and payments over a defined period.

Certification
A system of maintaining seed quality according to official standards specified by an agency established for this purpose. The agency carries out inspections to ensure standards are met.

Certified seed
The first generation of seed from a controlled multiplication process made available to farmers for normal grain production.

Contract grower
A farmer who grows seed for a larger organization according to a formal agreement and on commission.

Creditor
The party to whom is owed a debt – in the case of a loan, the lender.

Debtor
The party who owes a debt to the business – in the case of a loan, the borrower.

Demand
The need or desire for goods or services that the customer can afford and is willing to pay for.

Depreciation
The amount of money put aside each year as a fixed cost to represent the loss in value over time of a fixed asset.

Disburse
To pay out money from a fund to settle a transaction.

Distribution channel or mechanism
The route or means of distribution of goods from producer to consumer.

Economies of scale
Factors causing the average (or unit) cost of producing a commodity to fall as output of the commodity rises.

Enterprise
One or more easily identifiable parts of a business under common ownership or control, for which there are specific potential returns.

Enterprise diversification
A situation where a business holds a combination of investments or enterprises to reduce risks.

Gross margin
Value of an enterprise's output minus its variable costs.

Hectare (ha)
A unit of measurement of area equivalent to 10 000 m2.

Improved variety
A variety bred to incorporate superior genetic characteristics resulting in high yield potential and agronomic attributes (e.g. resistance to biotic and abiotic stresses). Seed of such a variety is commonly referred to as improved seed.

Inventory
The quantity of goods or material available (e.g. seed in store).

Liability
Total value of claims on the assets of a business by the various parties supplying funds.

Liquidate
To remove assets by converting them into cash.

Liquidity
The ease with which an asset can be converted into money. Consequently, a measure of the ability of an enterprise to meet its financial obligations as they arise without disrupting normal business.

Lot (seed lot)
A uniform batch of certified seed of a particular variety and crop from which a sample is taken for certification. The maximum lot size for cereals is 30 tonnes (ISTA requirements).

Marketing margin
The difference in the value of a specified unit quantity (e.g. tonne) of seed at different stages in the production/distribution chain.

Net worth
Value of assets available to the owner of the business once all other claims against these assets have been met.

NGOs
Usually non-profit (charitable) organizations by statute.

Open-pollinated varieties
Varieties produced as a result of natural pollination – as opposed to hybrid varieties, which are the result of controlled pollination.

Output
The value of goods and services produced by an enterprise.

Overhead costs
Indirect costs, such as depreciation, rent, supervision salaries and other administrative costs, which cannot be associated directly with specific units of final output.

Private sector
Commercial sector made up of privately owned enterprises of varying sizes and not necessarily having close relations with public sector operations.

Privatization
A process of promoting private sector participation in an economy. It involves the introduction of market forces to facilitate free trade and the conversion of government enterprises into private companies.

Profit
Surplus remaining in the business after all costs have been met (i.e. total sales revenue minus total costs). If there is a deficit, this is called a loss.

Profit and loss account
A record of financial transactions and the resulting enterprise profit or loss for the financial year, including an opening valuation of stock, costs and revenue for a given period and a closing valuation of stocks at the end of the financial year.

Public sector
State-owned, non-commercial institutions and enterprises.

Risk
The part of uncertainty that can be measured.

Rogueing
The process of removing by hand plants of the variety grown for seed that do not appear healthy or sufficiently characteristic.

Sensitivity analysis
An analytical technique to test systematically how specific changes in key variables would affect output or earning capacity of an enterprise.

Salvage value
Also known as residual or terminal value. The value remaining in an asset at the end of a project or at the end of its economic life.

Solvency
The ability of an enterprise to meet its financial obligations if all its assets are sold.

Uncertainty
The state of not knowing the exact outcome of an event.

Variable cost
Costs readily allocated to a specific enterprise and which vary in approximately direct proportion to changes in the scale of that enterprise.

Working capital
Also known as current asset. An item of value, held for conversion to cash within a short period (usually 1 year). Also money held in an enterprise for the purchase of inputs and inventory after all current liabilities have been paid. Inventory items held in anticipation of future sales (e.g. seed in store) can be classified as working capital.

Yield potential
The theoretical maximum yield that a variety is genetically capable of giving, as usually determined under optimum conditions in a research station.

The Seeds Toolkit

Seeds are the vehicle for delivering the improvements in a crop to the farmer's field. They are therefore a critical input in agricultural production. Seeds are unique in that they must remain alive and healthy when they are used and they are also the input that farmers can produce by themselves.

These factors were borne in mind in preparing the Seeds Toolkit that comprises the following six interrelated modules:

1. Development of Small-Scale Seed Enterprises. This provides a stepwise guide for the establishment of commercially viable seed enterprises in farmers' communities. It covers the critical steps from the business plan to the production of seeds for sale.

2. Seed Processing. This presents the underlying principles of seed processing, the equipment used and the overall best practices from reception through conditioning to final delivery to customers. This module focuses on the use of affordable small-scale equipment for seed processing and sowing that may also be fabricated locally.

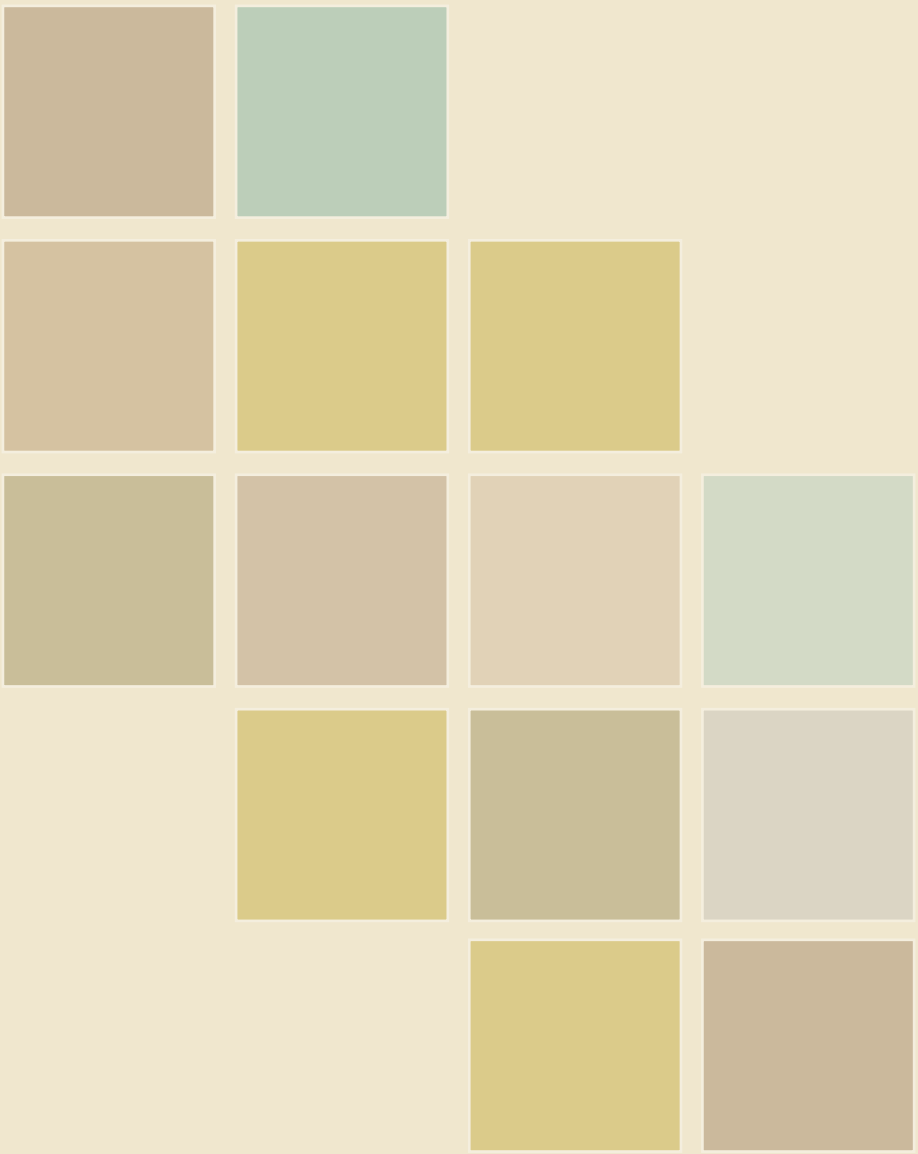
3. Seed Quality Control. This assists seed practitioners and other stakeholders in meeting the set quality standards for seeds and in implementing procedures for certification. The topics covered include field inspections and seed conditioning, packaging and tagging, storage, sampling/testing, and distribution.

4. Seed Sector Regulatory Framework. This provides information on the elements of the regulations that govern the seed value chain – from variety registration through quality seed production to distribution and marketing. The materials covered include information about national seed policy, seed law and regulations, their definitions, purpose and interactions.

5. Seed Marketing. This presents the underlying principles for valuing and exchanging seeds. This module describes all the activities that are undertaken in getting seeds from the producers to the end-users or farmers. The reader is provided with guidance on how to conduct relevant research of the market for seeds, develop effective marketing strategies, articulate a marketing plan and manage the associated risks.

6. Seed Storage. It is estimated that 25–33 percent of the world grain crop, including seeds, is lost each year during storage. To avert this obvious drawback to food security and nutrition, this module provides the underlying principles for effective seed storage and the associated practices. The module provides guidance on the preservation of seeds under controlled environmental conditions to maximize seed viability for the long periods that may be required from harvesting through processing to planting.

This module provides a stepwise guide for the establishment of commercially viable seed enterprises in farmers' communities. It covers the critical steps from the business plan to the production of seeds for sale.



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