Food and Agriculture Organization of the United Nations

SEEDS TOOLKIT

Module 5: Seed marketing

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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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TECHNICAL REVIEWERS

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Hamza Bahri and Diana Gutiérrez Méndez coordinated the language editing, illustrations and layout. Ruth Duffy edited the document, Shalis Stevens produced the illustrations and Art&Design undertook the overall design and layout of the publication.

Abbreviations and acronyms

CGIAR	Consultative Group on International Agricultural Research
FAO	Food and Agriculture Organization of the United Nations
IFAD	International Seed Testing Association
IMF	International Monetary Fund
IPPC	International Plant Protection Convention
ISF	International Seed Federation
NGO	Non-governmental organization
OPV	Open-pollinated variety
SMART	Specific, measurable, achievable, relevant and time-bound
SRR	Seed replacement rate
STEEPLE	Social, technological, economic, environmental, political, legal, ethical
SWOT	Strengths, weaknesses, opportunities and threats
UNDP	United Nations Development Programme

Introduction

The global market for seeds is projected to exceed US$ 130 billion by 2022. This growth is driven by permanent release of new varieties and hybrids that bring more sophisticated technology to farmers as well as a steady increase of international seed trade and exponential increase in food demand from the expanding global population amid decreasing availability of arable land. However, in many emerging markets, it is estimated that quality seed from the formal seed market accounts for only 10–20% of the total seed market, with the remaining 80–90% being supplied by the non-commercial or informal sector comprising farm-saved seed. The global market for seed therefore shows great scope for further introduction of improved varieties and quality seed. In particular, the development of drought-tolerant varieties and of varieties that tolerate pests, weeds and major plant diseases has a great part to play.

At the developing country level, the most widely discussed seed industry topic is marketing. This is the result of the generally unsatisfactory experience associated with direct and indirect participation of governments and other development organizations in seed production and distribution in many countries. The recent trend towards competitive market-oriented seed industries with private sector participation has not yet resulted in significant purchase of seed by ordinary farmers, especially for self-pollinating crops. This is due in part to the high price of seed, but also to farmers' limited awareness or appreciation of the seed's quality attributes. Seed enterprise managers and suppliers in particular must make an increased effort to understand marketing practices and processes, in order to make more astute and better-informed marketing decisions, and thus achieve enhanced seed sales and greater profitability.

However, to mainstream marketing in the seed industry and achieve successful results in developing countries is not easy, because the **marketing of seeds** is unique. A living product is involved, a product that must still be viable when it reaches farmers for planting. Furthermore, in many cases farmers already possess the same product, albeit in different forms. It is not sufficient for farmers to receive seed of the right crop, variety and quality; they must prefer it to what they have on their farms. The marketing process must include all activities and services involved in moving quality seed from producers to end users. For effective marketing – especially in small-scale enterprises – the seed producer must possess good technical knowledge and expertise in a series of interconnected activities from production planning, crop cultivation and seed harvest, to maintenance of field and seed quality standards, seed cleaning and packaging, transport and storage, through to distribution, promotion and sale.

This module outlines the general principles of product marketing and explains how to apply them in the seed industry. The **objectives of the module are**:

- help seed enterprises understand the needs of their farmers;
- produce seed according to these needs;
- promote the seed they produce; and
- convince farmers to buy it.

It targets seed enterprise managers and their staff, as well as those who support or are interested in such initiatives, including NGOs, other rural development organizations, political decision-makers and funding agencies.

The illustrated module comprises five chapters. Each chapter includes exercises designed to stimulate group discussion and brainstorming during training sessions.

Chapter 1 introduces and explains key principles, issues and concepts of marketing in the context of seed enterprise management.

Chapter 2 analyses the dimensions of research amenable to seed markets, including a discussion of best practices for small-scale enterprises in developing countries.

Chapter 3 nes important strategies for effective seed marketing.

Chapter 4 explains how to develop a seed marketing plan to enable small-scale enterprises to improve customer satisfaction and strengthen their competitive positions in the market.

Chapter 5 examines risk management issues that are relevant and applicable to small-scale seed enterprises.

This module applies the principles of marketing to **all seed production practices**. The seed industry in many developing countries is still in the early stages of growth with small seed markets and few enterprises. However, as established enterprises expand and new ones enter the growing marketplace, they need to apply marketing principles of product differentiation in order to have a competitive advantage.

① Principles of seed marketing


Farm Shop
SEED AND SUPPLIES

Principles of seed marketing 1

notes

A seed producer's main goal is to **satisfy the seed needs of the farming community**, which could be a village or group of villages, a province or country, or even farmers located in different countries. In this context, the scope of marketing is very wide and goes beyond the sale of seeds. Seed marketing activities should be coordinated to develop an appropriate "marketing mix" with the aim of achieving maximum **customer satisfaction** (the "customer" being the farmer).

WHAT IS SEED MARKETING?

Seed marketing is the process by which seeds and associated services are valued and exchanged. It entails all those activities involved in transferring seeds from producers to end users (i.e. farmers).

Seed marketing is much more than the physical process of distributing seeds and providing accompanying services. To succeed, seed companies must not only supply seeds and related services; they need to **understand the marketplace** and fully **meet the needs** of their customers.

Figure 1. Purchasing seed

notes

Seed marketing begins with the farmers (understanding their needs in terms of crops, varieties, packaging size etc.) and ends with the farmers (satisfying their specific needs). Within this scope, the **producer has three broad functions**:

- Exchange or sale (buying and selling)
- Physical supply (storage and transportation)
- Facilitation (marketing research, production planning, seed processing, packaging, branding, sales and promotion).

The objective of these three functions is to **identify, satisfy and retain customers**. This is crucial in a seed market offering alternative products, including farmers' own saved seed and quality seed provided by competing producers. A successful seed company creates a competitive advantage by consistently providing farmers with the seed and services they need in the hope that these farmers will become loyal customers, cease to consider the alternatives and develop the habit of purchasing seed only from the company

Figure 2. Buying and selling seed at the market

Figure 3. Collection of stored seed for distribution

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of their choice. This forms the basis of the marketing concept and its underlying principle, i.e. f**ocus on the needs/desires of target markets and deliver better value than existing competitors.**

WHAT IS THE DIFFERENCE BETWEEN SEED SALE AND SEED MARKETING?

Sales and marketing are often considered synonymous, especially in small and medium-sized businesses: they are closely interlinked and both aim to increase revenue. However, there are **significant differences**, and in large companies specialized people in separate departments handle sales and marketing independently. In small enterprises, these functions tend to be combined.

Figure 4. Market facilitation

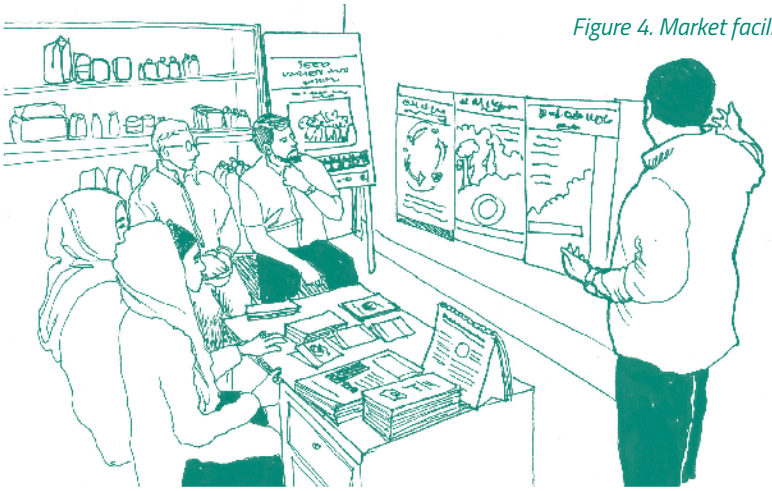

Figure 5. Satisfied customers

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At all levels of the seed industry, **marketing** includes:

- research (identifying farmers' needs);
- variety development; and
- promotion of quality seed of new varieties (through advertising, on-farm demo plots, field days, open days etc.) to create awareness among farmers.

Once production is completed and seed is made available in the market, **selling** involves:

- persuading farmers to buy; and
- maximizing sales and profits.

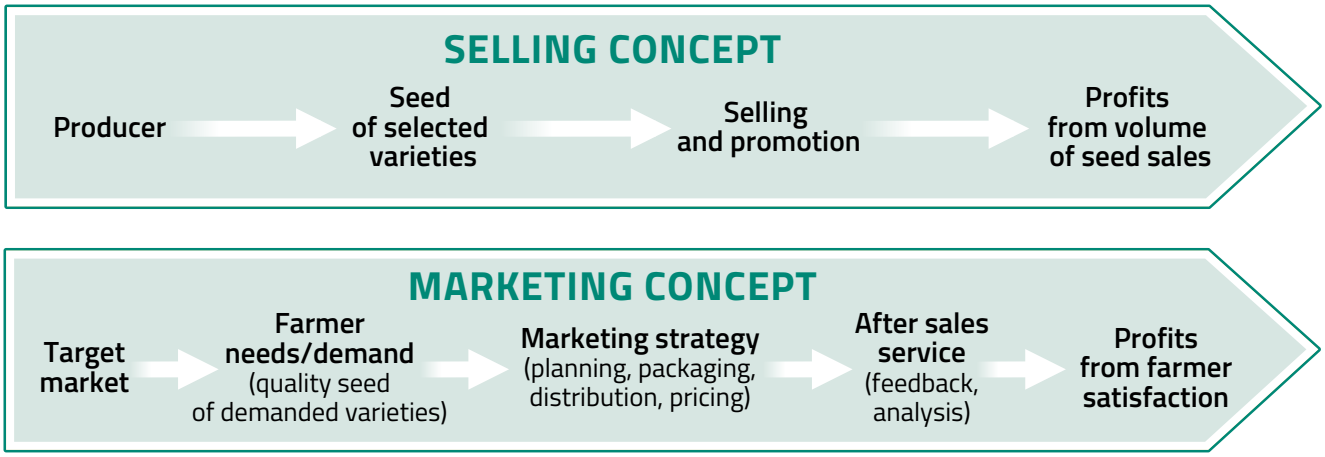
Figure 6. Marketing and sales departments in a seed company

The emphasis changes. Selling has a product focus and is largely producer driven with the aim of maximizing sales and profits. The objective in **seed sales** is to satisfy the **needs and interests of the seed producer** – where necessary using assertive sales methods at the expense of the farmer's needs and satisfaction. On the other hand, **seed marketing** is based on the **needs of the farmer,** and involves a chain of activities associated with planning the production; pricing, promoting and distributing the seed; and finally, receiving feedback on farmer satisfaction after the seed has been used.

SEED MARKETING CONCEPT

According to the marketing concept, companies should strive to satisfy the needs and desires of their customers. With the rapid growth of seed markets – in terms of both varieties and suppliers – farmers tend to be increasingly knowledgeable and selective. Therefore, seed producers can no longer only focus on what they can sell: they have to concentrate on what farmers want to buy. With this marketing concept, suppliers must make strategic marketing decisions based on the needs and demands of farmers, and aim to deliver better value (varieties, seeds and services) than their competitors in the same target market.

Figure 7. Selling and marketing concepts



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The marketing concept has **three key aspects**:

- **Target market** – market giving the seed company the best returns on investment. Market research usually determines the target market.
- **Needs and demands of the target market** – consumer preferences or needs and demands of the farmers. Market research ascertains the needs and demands of the target market. This information is essential for helping the company define marketing strategies, decide which varieties to multiply and plan seed production.
- **How to deliver value to the target market** – best ways of satisfying the target market. The seed company decides which marketing strategy to adopt and how to apply the marketing concept.

The marketing concept adopted depends on the **company structure and philosophy**. While some (mainly large) companies may set up a specific marketing department, others may wish to structure themselves into holistic marketing organizations in which the entire organization becomes customer-

Figure 8. The customer come first

Figure 9. A hard-thinking seed producer

notes

oriented and exists basically to satisfy customer needs. Smallholder seed enterprises use social contacts and personal communication to collect the necessary data.

It is essential to undertake **market research** to identify appropriate market segments and ascertain their size, characteristics and specific needs.

It is important to identify the right varieties, charge the right price, get the seeds to the right place at the right time, and create awareness, i.e. the company must achieve the right **marketing mix**.

MARKETING MIX IN THE SEED INDUSTRY

The marketing mix comprises **four controllable parameters** in the business: **Product, Price, Place and Promotion**, commonly known as the **4Ps**.

In a successful business, those in charge of marketing must be able to control and create an appropriate mix of the 4Ps subject to external constraints of the

Figure 10. Labelled seed offered for sale

1

marketing environment. In doing so, the business must satisfy the following conditions:

- **Product**. Seed offered for sale must have the right characteristics (desired crop/variety and high quality in terms of purity, germination capacity and health).
- **Price**. Seed must be both affordable for famers and able to generate a reasonable profit for the enterprise.
- **Place**. Seed must be in the right place at the right time (normally within easy reach of the farmers and in an area where the enterprise is able to compete for market share).
- **Promotion**. Target farmers need to be made aware of the existence and availability of the seed through appropriate strategies in line with the company objectives.

For successful seed production and marketing, enterprises have to balance the four elements to achieve a combination that serves the needs and satisfaction of the target farmers while generating optimum revenue from sales.

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Figure 11. A satisfied customer

Figure 12. A busy seed store

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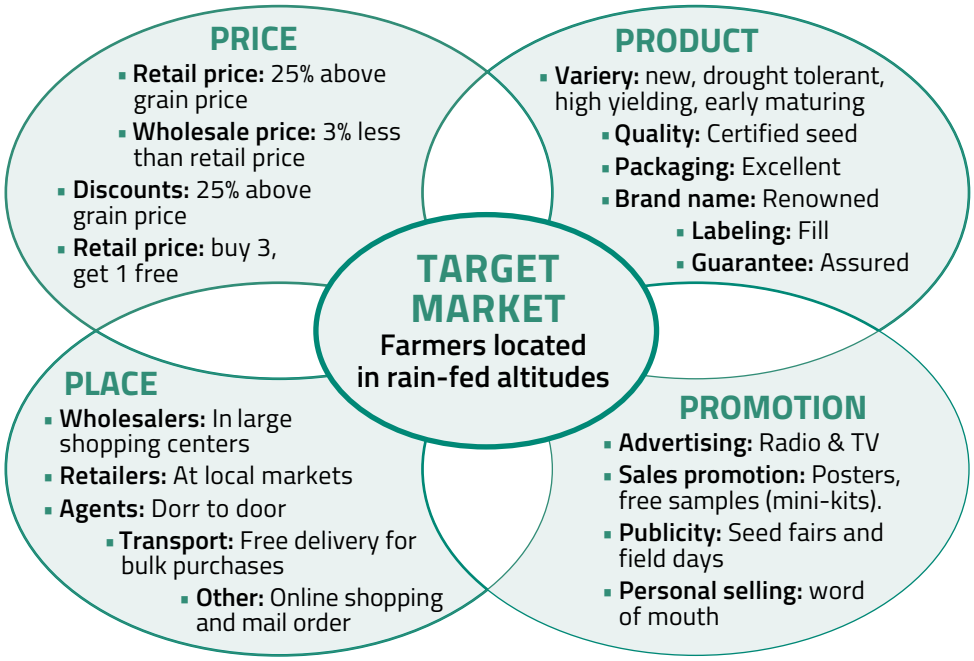
Successful enterprises need to combine all four parts of the marketing mix to develop their **marketing strategy**. For example:

- To protect **product quality** throughout the production process, carefully supervise and monitor contract growers to ensure that only seeds from the best plots are harvested and processed.
- To create market share for a new crop variety, set a **promotional price** for special seed packages to encourage farmers to try a new product.
- To sell products in **remote places**, offer free delivery for orders of a minimum quantity.
- To promote **"honesty and credibility",** ensure that the labelling on all seed packages carries clear information on the levels of germination, purity and seed health in accordance with standards that fulfil or surpass the national minimum standards in order to help farmers choose.

Overall, the message should ensure that the company remains a **trusted brand in the marketplace**.

.Figure 13. Marketing mix



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UNDERSTANDING DEMAND AND SUPPLY FACTORS IN SEED MARKETS

Demand and supply are the two fundamental components of any product market. In the seed industry:

- demand is the desire and willingness of farmers to buy a specific kind of seed;
- supply is the behaviour of seed producers in the marketplace in producing and making available a particular type of seed for sale.

A good understanding of demand and supply by owners of seed enterprises and their staff leads to smarter, better-informed marketing decisions and greater profitability. For example, appreciating how certain factors affected demand and supply prospects in the past can help understand possible market prospects in the future.

Concept and nature of demand for seed

Market demand (or **aggregate demand**) represents the total amount of seed all farmers are willing to buy at a range of prices in a given time period. At an individual level, a farmer may be willing to buy a particular quantity of seed as long as the market price is reasonable and the farmer has sufficient income. The quantity demanded by an individual farmer is the amount (number of units) of seed that he/she would buy in a given time period at the current (or given) market price. The market demand is the total of all the quantities that all individual farmers want to buy in the market at various price levels.

The law of demand

A **demand schedule** for seed is a table showing how much of a given seed farmers would be willing to buy at different prices. The graph shows market demand as a downward sloping demand curve or line with "price" on the vertical axis and "quantity" on the horizontal axis.

The **demand curve** (or **demand line**) is derived from the demand schedule and illustrates how much of a given seed farmers would be willing to buy at different prices.

The **law of demand** states that there is a negative (or inverse) relationship between the quantity of goods demanded and the price, which means that demand curves slope downwards. An increase in price generally results in farmers wanting to buy smaller quantities of seed; therefore, the relationship between price and demand is negative.

Figure 15 shows a typical demand curve (or line) indicating that as price increases, farmers are willing to buy less.

In this case, the farmer's decision about how much seed of a particular variety to demand depends only on the seed price. The relationship between the prevailing market price (P) and the quantity of seed demanded (Q) is key. In

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Figure 14. Theoretical structure of demand and price

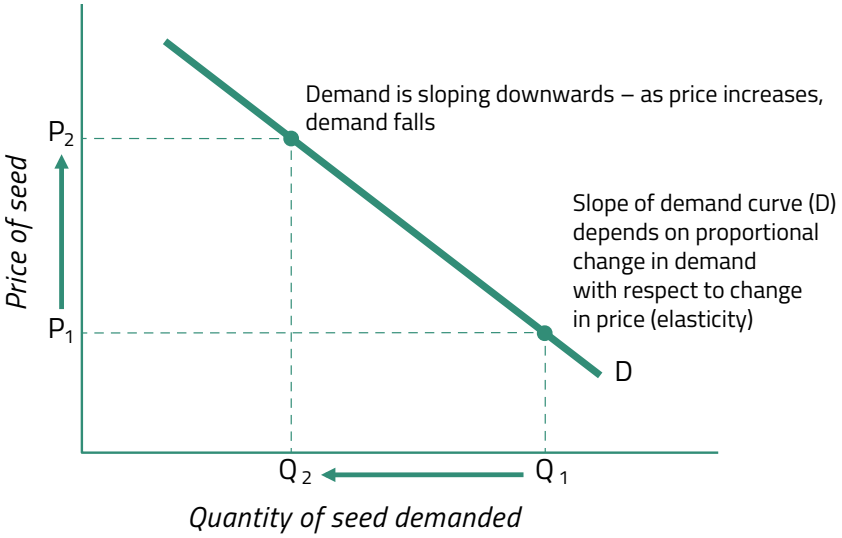
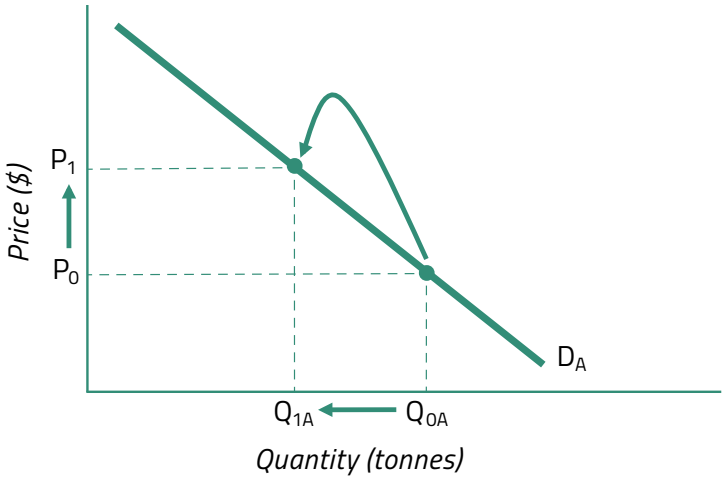


Figure 15. Movement along the demand curve as price increases



examining the Q–P relationship, all other factors (income, wealth, other prices, taste and expectations) are assumed constant. As shown in figure 16, a higher price (P_1) results in a reduction in quantity demanded and a move along the demand schedule (DA) from Q_{0A} to Q_{1A}.

Shifts in demand

There are non-price determinants of demand – those factors that will cause demand to change even if price levels of seed remain the same. Changes in these factors might cause the farmer to buy more or less seed even when the seed price remains unchanged. While a change in seed price leads to a change in the quantity of seed demanded (movement along the demand schedule), changes in non-price determinants can cause a shift of the demand curve, resulting in a new demand curve.

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Non-price determinants

Changes in disposable income

In general, the more income farmers have to spend, the greater their ability to purchase inputs such as seeds. However, income can affect demand in two ways, depending on the type of goods: normal or inferior. **Normal goods** (e.g. certified seed) are goods for which farmer demand goes up when income increases and down when income falls. On the contrary, **inferior goods** (e.g. non-certified seed) are goods for which demand falls when income rises. Therefore, when income rises, the demand curve for normal goods shifts outwards to the right as more is demanded at all prices, while the demand curve for inferior goods shifts inwards to the left as less is demanded.

Changes in price of related goods

The demand for one item is based on the prices paid for other related items purchased by farmers, and depends on whether these are substitutes or complements.

- **Substitutes** are goods that can serve as replacements (e.g. irrigated wheat varieties X and Y with similar attributes). A change in the price of a substitute variety induces farmers to modify the mix of varieties they can purchase. When the price of one substitute (X) increases, demand for the other (Y) goes up because the increase in the price of X motivates farmers to buy more Y and less X. **Perfect substitutes** are identical products (e.g. perfectly identical irrigated wheat varieties).

Figure 16. Shift of demand curve (1)

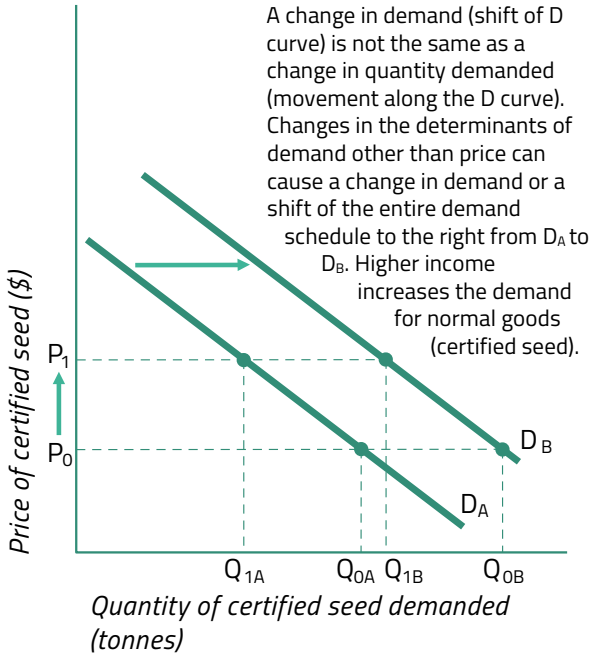
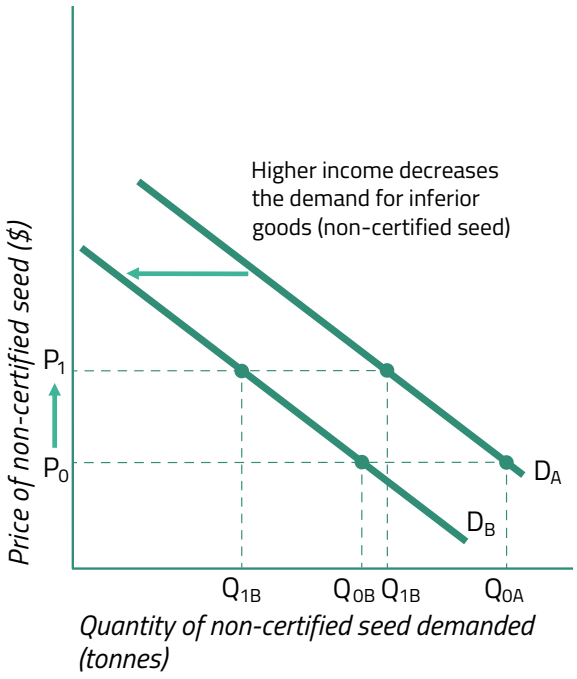


Figure 17. Shift of demand curve (2)



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- **Complements** are goods that "go together" (e.g. irrigated wheat variety and fertilizer): a change in the price of a complementary good induces farmers to demand more or less of both goods. A rise in the price of one complement results in a fall in demand for the other, and vice versa, because an increase in the price of one complement motivates farmers to buy less of both.

Farmer preference

The satisfaction farmers derive from a particular type of seed depends on their preferences, which in turn influence their willingness to purchase that seed. The greater the satisfaction the seed provides, the more farmers are inclined

Figure 18. Movement along the demand curve for irrigated wheat

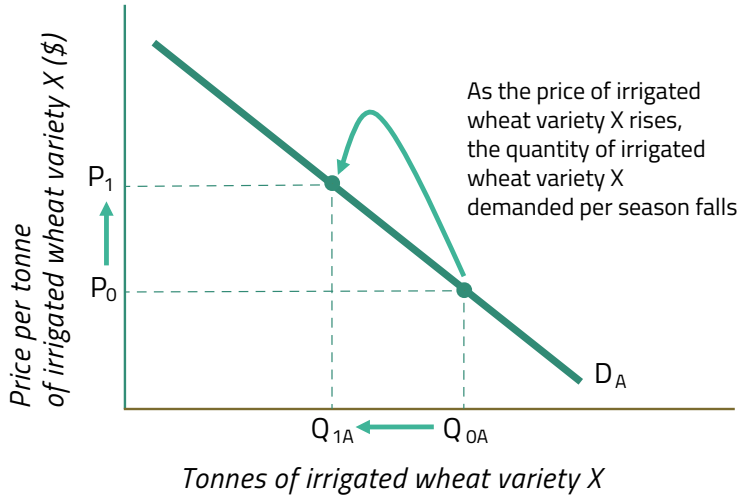
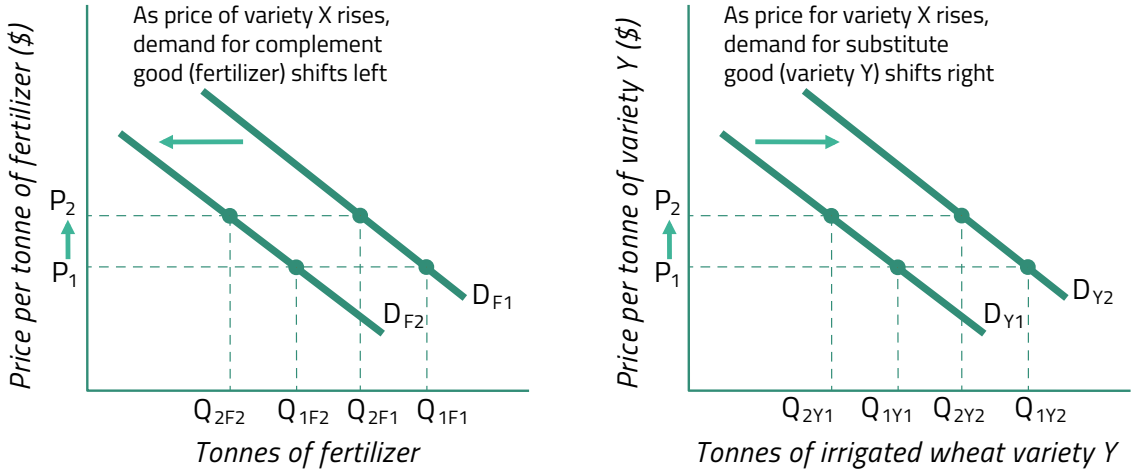


Figure 19. Shifts in demand for complements and substitutes



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to purchase it. A shift in the demand curve to the left or right can represent a change in the preferences of farmers. A shift to the right indicates that a product has become more commercially attractive or desirable and that a larger quantity will be sold at a given price, while a shift to the left is the opposite: a product is less desirable and a smaller quantity will be sold at a given price. A negative perception can reduce consumer demand for an item, shifting the demand curve to the left. In the seed industry, simple competition can cause the demand curve to shift left, as farmers stop buying one variety in favour of another, new, more desirable variety from a different enterprise. The marketing objective of successful enterprises is to shift the demand curve they face to the right through effective promotional campaigns influencing the taste or preferences of farmers.

Changes in farmers' expectations

Farmers normally seek to purchase seed at the lowest possible price. However, **a decision made in the present depends on future expectations** with regard to, for example, income, seed prices and availability of seed. If farmers expect the price to decline, they are inclined to postpone buying or buy less in the present, hoping to take advantage of lower prices in the future. In contrast, if they expect the price to rise, they may wish to buy more in the present, stocking up before the price increase.

Market size

The number of farmers who can afford and are willing to buy seed **(potential buyers**) affects the overall seed demand and determines the size of the seed market. The more buyers there are, the greater the demand; the fewer buyers there are, the lower the demand. If the size of the market decreases, the demand curve shifts to the left, indicating a higher price and fewer potential buyers. If the market size increases, the demand curve shifts to the right, indicating a lower price and a larger number of potential buyers. More people moving into an area, thus creating more potential buyers, can cause increased market size over time.

Price elasticity of demand for seed

Price elasticity of demand for seed measures the responsiveness ("elasticity") of the quantity demanded to a change in the price. It gives the percentage change in quantity demanded in response to percentage change in price, while all other determinants of demand, such as income and farmer preference, remain constant. Let price elasticity of demand for seed = ϵ_d

$$\epsilon_d = \frac{(\%\Delta QD)}{(\%\Delta P)} = \frac{\text{Percentage change in quantity of seed demanded}}{\text{Percentage change in price of seed}}$$

This formula usually produces a negative value because of the inverse relationship between price and quantity demanded, as described by the law of demand. Although the value of price elasticities is usually negative, the negative sign is normally ignored for the sake of simplicity.

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The demand for seed is **elastic** (or relatively elastic) when the price elasticity of demand has an **absolute value > 1**, indicating that **price changes have a relatively large effect on demand**.
The demand for seed is **inelastic** (or relatively inelastic) when the price elasticity of demand has an **absolute value < 1**, indicating that **price changes have a relatively small effect on demand**.
Demand for seed of wheat, barley and beans is relatively elastic since farm-saved seed is a close substitute. A moderate increase in seed price results in a greater fall in seed demanded. Demand for hybrid seed of maize is less elastic, since farmers cannot produce their own seed. A moderate rise in seed price causes little change in demand.

Figure 20. Relative elasticities of demand

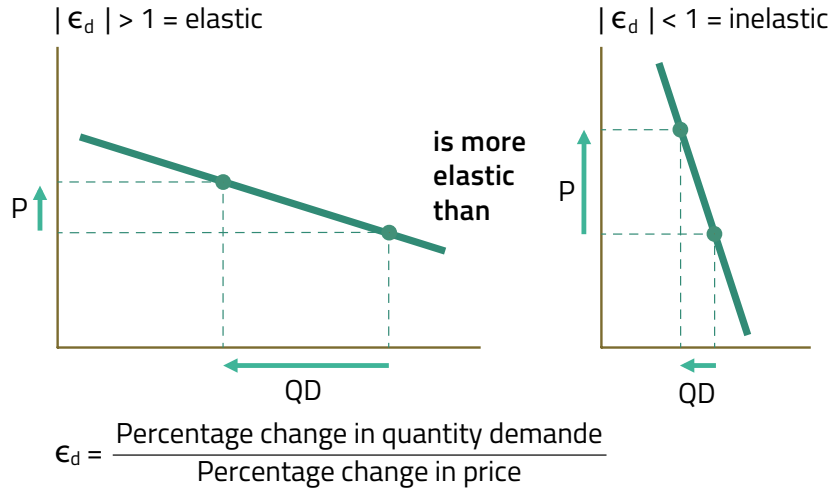
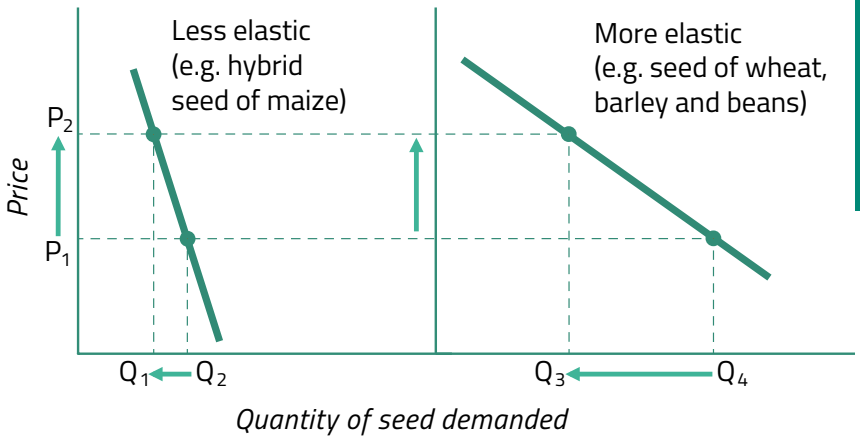


Figure 21. Relative elasticities of seed crops



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The price elasticity of demand for seed depends on the following factors:

- **Seed price and market demand.** If the seed price of an existing variety increases, farmers may decide to use their own seed where possible rather than replace it with the new quality seed. The technical aspects of seed production (including labour requirements) contribute to the price of seed and consequently to its demand by farmers.
- **Seed cost as a proportion of farmer income.** The higher the percentage of farmer income accounted for by seed cost, the greater the elasticity, as farmers take care purchasing seed according to the price.
- **Farmer expectations about future seed prices.** If farmers believe that the price of seed will rise in the future, they are more likely to purchase seed in the present and vice versa.
- **Competition with substitutes.** The greater the number of different varieties of substitute seed, the greater the elasticity, as farmers can easily switch from one seed type to another with minor changes in price.
- **Brand loyalty.** Farmers' attachment to a certain brand of seed out of habit may override sensitivity to minor price changes, resulting in demand that is more inelastic.
- **Government policy: who pays**. Where farmers do not pay directly for seed (e.g. using cash vouchers from development agencies or the government), demand is likely to be more inelastic.

There are five zones of elasticity, applicable to products or services:

- **Perfectly elastic** - any very small change in price results in a very large change in demand. Most products in this category are **pure commodities**: there is no brand and no product differentiation, and customers have no meaningful attachment to the product.
- **Relatively elastic** - small changes in price cause large changes in demand (absolute value > 1). A good example is **beef**, which has substitutes such as chicken and pork.
- **Unit elastic** - any change in price is matched by an equal change in quantity (absolute value = 1).
- **Relatively inelastic** - large changes in price cause small changes in demand (absolute value < 1). A good example is **gasoline**, because most people need it and even when prices go up, demand does not change greatly. In addition, products with strong brands tend to be inelastic; building brand equity is therefore a good investment.
- **Perfectly inelastic** - demand does not change when the price changes. Products in this category are necessities: consumers need them and have no alternative. This situation tends to arise when a firm has a monopoly on demand: when the price changes, customers still have to buy from the monopoly company.

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Marketing companies need to know in which zone their products fall and what will happen to consumer demand if the price changes. This information is more important than the actual quantity.

Let's look at an example. Assume that when wheat seed price increase by 50%, wheat seed purchases fall by 25%. Using the elasticity of demand formula above, we can calculate the price elasticity of wheat as:

Price Elasticity = (-25%) / (50%) = -0.50

Thus, we can say that for every percentage point that wheat seed price increases, the quantity of wheat seed purchased decreases by half a percentage point.

Price elasticity is usually negative following the law of demand; as price increases quantity demanded decreases. As wheat seed price goes up, the quantity of wheat seed demanded will go down.

Forecasting seed demand

Forecasting seed demand is the process of predicting future demand for seed and making projections based on past patterns and prevailing trends in seed use.

A reasonably accurate forecast is possible by asking samples of farmers to gauge their anticipated demand for seed. This exercise is more reliable when farmers are aware of the benefits of using improved seeds.

Another approach – suitable in particular for self-pollinating crops – involves the use of seed replacement rate (SRR). The SRR is the number of generations that seed from a previous crop can be used. A farmer's decision to replace seed depends on the quality of the seed used – the extent of its deterioration and how this effects productivity. Various factors result in seed quality deterioration:

- **Physical admixtures** – admixture occurs in the field, at the threshing ground or during storage, when seeds of other crops or varieties are mixed with seeds of a given variety.
- **Reduction in germination capacity** – germination capacity declines as a result of physical damage caused by insect and fungal infestation, moisture, and breakage or death of the embryo due to ageing or prolonged exposure to adverse environmental conditions.

Deterioration is generally slow in self-pollinated crops like wheat and rice, influencing the SSR of these crops.

Agricultural research in many countries has established seed replacement rates for different crops and categories of farmers. Knowledge of a crop's SRR and other factors, such as area cultivated and seed rate per unit area, can help determine the quality of seed used by farmers.

notes

Use the following equation to calculate the SRR for quality seed of a crop (e.g. rice):

$$SRR = \frac{(Q \times 100)}{(A \times K)}$$

where,
SRR = seed replacement rate for rice
Q = quality seed used by farmers
A = area under rice crop

K = seed rate per unit of area

Policy-makers usually adopt this approach to forecast the demand or requirement for quality seed of various crops, since the area under cultivation is easily projected and the recommended seed rates are available.

It is essential not only to have quality seed with outstanding attributes available, but also to have an effective promotion strategy to create awareness among farmers and achieve wider adoption and diffusion. Seed **certification schemes** can play an important role in terms of assuring and maintaining seed quality standards so that farmers can trust the quality of seed sold by seed companies or other suppliers including government institutions. Of particular concern is the issue of counterfeit or fake seed, which undermines genuine seed marketing efforts in many developing countries. Where fake seeds abound, it is difficult to make reliable seed demand forecasts, as farmers become wary of quality seed promoted by formal sources.

Nature of seed supply

The quantity of seed supplied represents the number of units of seed that an enterprise would be willing and able to offer for sale at a particular price during a given time period. **Supply** describes how producers react in the marketplace. A **supply schedule** is a table showing how much seed the enterprises will supply at different prices while a **supply curve** is a graph illustrating how much seed an enterprise will supply per period at different prices. At an individual level, a producer may be willing to sell a given quantity of seed as long as the market price is equal to or greater than the cost of production. **Market or aggregate supply** is the total quantity all producers want to sell in the market at various price levels. According to the **law of supply,** there is a positive relationship between the price and quantity of a good supplied in the market. This means that supply curves typically have a positive slope.

Seed supply is influenced by the following factors:

- Price of seed supplied.
- Number of enterprises producing the seed.
- Cost of producing the seed – the cost depends on the price of required inputs (labour, capital and land) and the technological advances that can be used to produce it.
- Price of alternative seeds that could be produced.

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- Unpredictable weather conditions.
- Alternative sources of seed (e.g. imports).

A change in seed price leads to a change in quantity supplied (movement along the curve), while changes in costs, input prices, technology, or prices of related goods and services lead to a change in supply (shift of curve).

In this example, the factor affecting supply is not the price of maize but a technological change in maize production, causing a shift of the supply curve rather than a movement along the supply curve. The technological advance means that more output can be supplied at any given price level.

Figure 22. Theoretical structure of supply and price

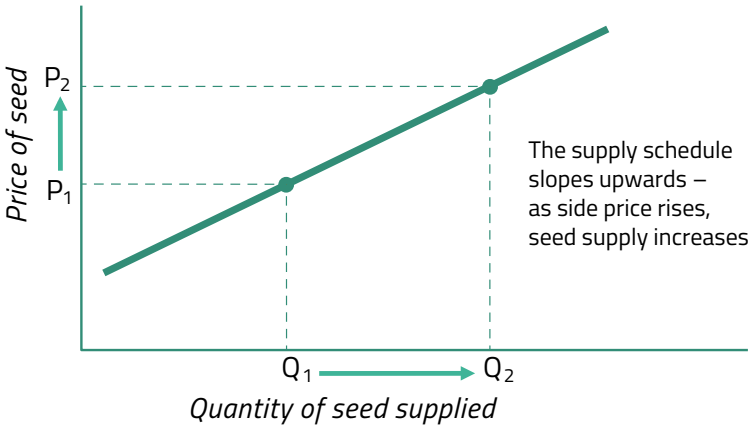
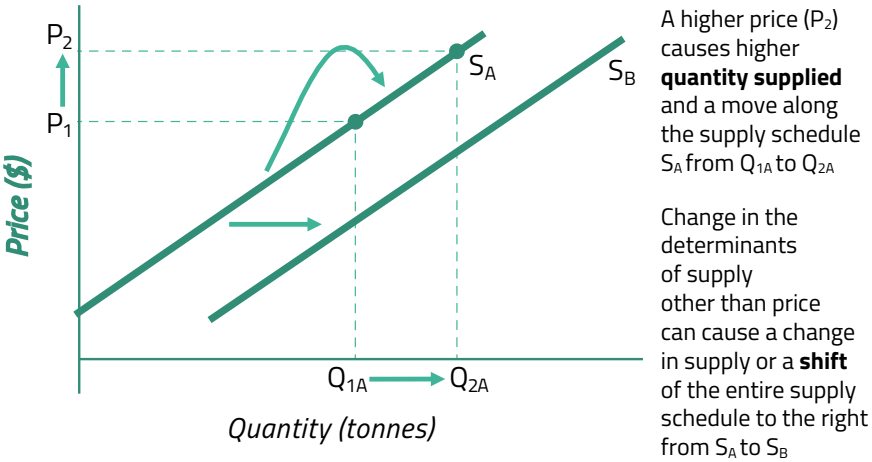


Figure 23. Movement along the supply curve and shift of supply curve



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How demand and supply determine market price for seeds

Demand and supply represent the willingness of seed-buying farmers and seed producers to engage in buying and selling. Seed price depends on the level of interaction between demand and supply.

Market equilibrium and price

When a seed exchange takes place, the agreed price is called an **equilibrium price**. Graphically, this price occurs at the intersection of demand and supply (see figure 26), where buyers and sellers of seed are willing to exchange the quantity Qeq at the price Peq. At this point, supply and

Figure 24. Shift of seed supply curve for maize following development of a new hybrid variety

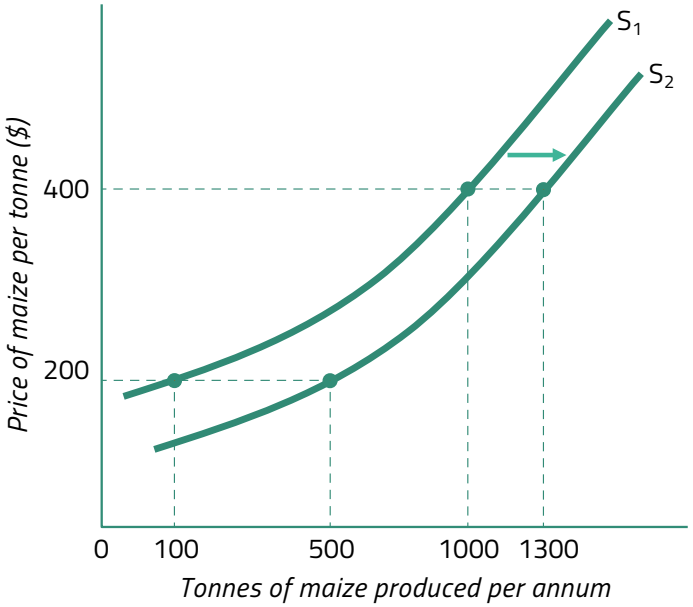
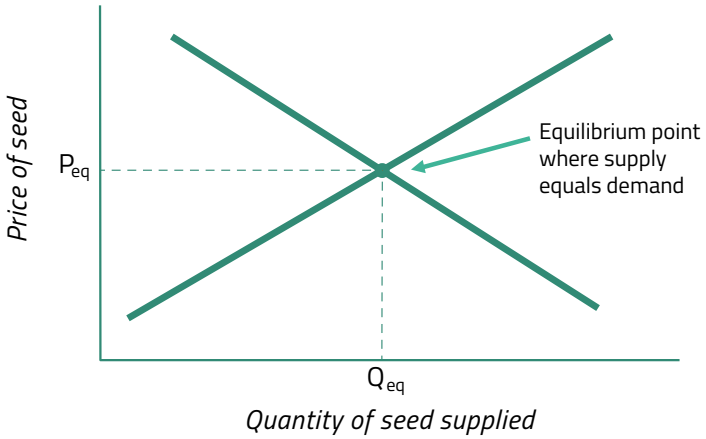


Figure 25. Theoretical structure of equilibrium price



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demand of seed are in balance. **Market equilibrium** is the condition that exists when the quantity of seed supplied and quantity demanded are equal. At equilibrium, there is no tendency for the market price to change.

Figure 26. Change in equilibrium price with shift in supply and more elastic demand

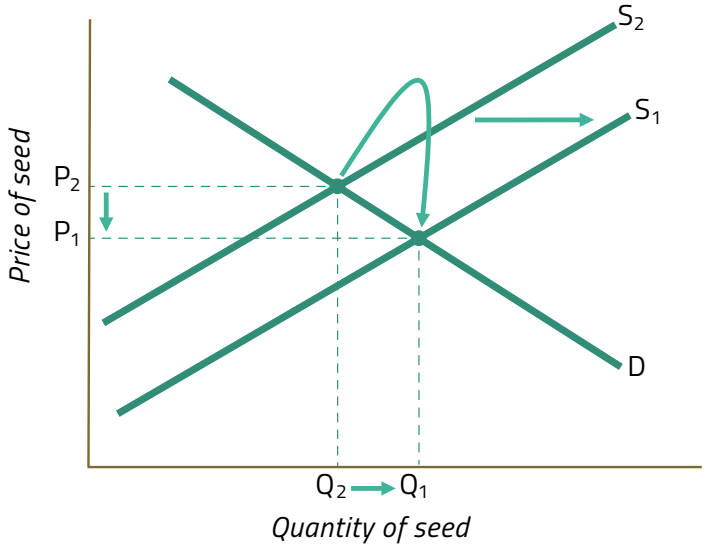
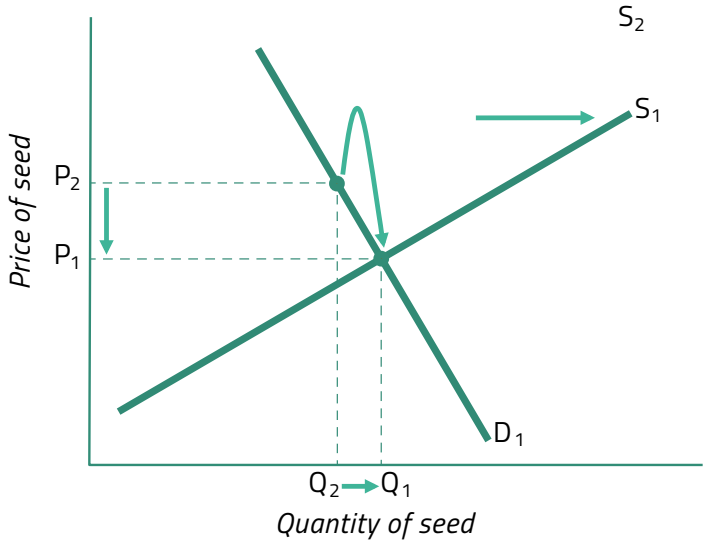


Figure 27. Change in equilibrium price with shift in supply and less elastic demand



Change in equilibrium price

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Only in equilibrium does quantity supplied equal quantity demanded (Qeq). The equilibrium price changes when either demand or supply shifts. Two forces contributing to the size of a price change are the amount of the shift and the elasticity of demand or supply. The two examples below illustrate the effect on price when short-term shifts in supply or demand occur in the seed market.

Example 1. Good weather conditions result in increased crop production
When a bumper crop occurs due to good rainfall pattern, crop production and related seed supply shift outwards to the right from S2 to S1 with more seed becoming available over the full range of prices. With no immediate change in farmers' willingness to buy seeds, there is a movement along the demand curve (D) to a new equilibrium. Farmers will buy more seed but only at a lower price; how much the price must fall to induce farmers to purchase more depends on the elasticity of demand. In a bumper year, the price falls from P2 to P1. For a steeper more inelastic seed demand (D1) and the same shift in supply (S2 to S1), the change in equilibrium price is greater with a smaller change in corresponding quantity (Q2 to Q1).
Example 1 shows that a large shift of the supply curve can have a relatively small effect on price if the corresponding demand curve is elastic; alternatively, it may cause a dramatic change if the demand curve is inelastic. It is the relatively small elasticity of demand and supply of agricultural products that causes price instability problems when either supply or demand shifts in the short term. Conversely, a lower supply in a bad year leads to a higher price and smaller quantity of seed exchanged.

Example 2. Farmer preference decreases for a particular variety
A decline in the preference for a variety can shift the seed demand curve inwards to the left (see figure 29) causing a fall in both price (P2 to P1) and the quantity of seed purchased (Q2 to Q1). With no immediate change in supply, the effect on price comes from a movement along the supply curve (S). The size of the change in price and seed quantity, from one equilibrium to another, depends on the elasticity of supply. If seed supply is assumed to be almost fixed over the period considered, the demand shift from D2 to D1 causes a move along a vertical inelastic supply curve; almost all the adjustment to a new equilibrium occurs in the change in price, while the change in seed quantity is negligible.

Examples 1 and 2 are based on factors shifting supply or demand in the short term. However, there are also long-term forces at play, shifting supply and demand over time. The following are long-term factors:

- **Technology**. Technological developments (e.g. seed drills and combine harvesters) can shift the supply curve outwards to the right by reducing the costs of production per unit of output, resulting in lower seed prices in the long term, because enterprises become capable of producing greater quantities at a lower production cost for each unit of seed.

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- **Population growth and rise in incomes.** Both factors have their effects over time and tend to shift demand to the right – although the shift is generally more gradual than that in supply due to technology. The shift in demand also leads to a long-term reduction in prices.

MANAGEMENT OF SEED DISTRIBUTION

Marketing encompasses distribution: the process of making seed physically available to farmers in combination with relevant supporting services. Distribution involves moving packaged seed from the warehouse (where it has been held since processing) to the locations of farmers. Several entities carry out seed distribution, for example, public sector parastatals, NGOs, cooperatives and private sector enterprises.

Figure 28. Change in equilibrium price with shift in demand and more elastic supply

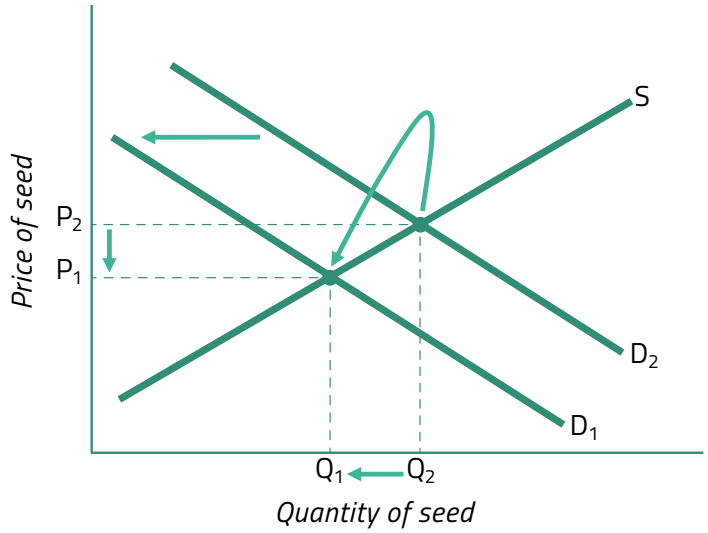
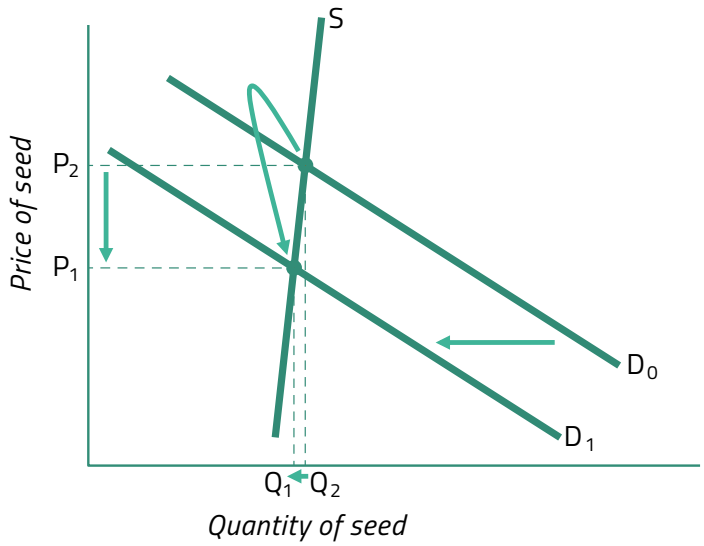


Figure 29. Change in equilibrium price with shift in demand and less elastic supply



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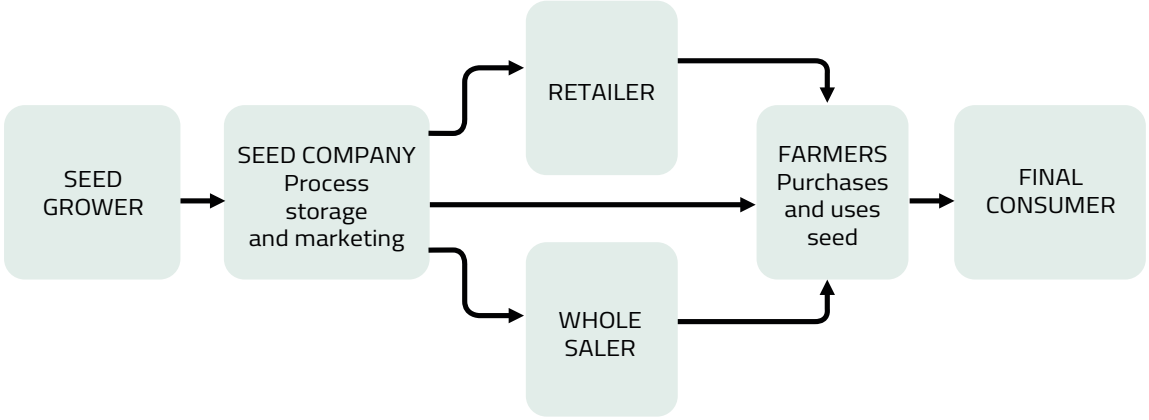
The route the seed follows to reach the farmer is the distribution channel, comprising several stages of transaction (figure 30). The distribution process may involve a single step (f), if sales are made directly to farmers, or a series of steps (b, c and d), if intermediaries (e.g. wholesalers and retailers) are involved. The choice of **distribution pattern** is influenced by the following factors:

- costs;
- intermediaries;
- type of seed;
- nature of the competition; and
- needs of the farmers.

Direct distribution can be problematic for high-volume, low-value seed of field crops, but it may be a viable option for low-volume, high-margin vegetable seeds. Suppliers operating direct seed distribution often have a specialized sales division with central stores and a network of supply points dealing directly with farmers. This system has the advantage of direct contact with the farmer in terms of service provision and control, but it is expensive, particularly in terms of fixed costs and staff and transport costs. Public sector parastatals or other large organizations with monopoly power can normally undertake direct seed distribution.

At each stage in the **distribution channel**, the seed changes in value and sometimes in form. Figure 30 represents a typical seed distribution channel. A proper understanding of this channel is necessary to determine the seed price. The raw seed obtained from contract growers is processed and stored by the seed company. Where intermediaries are active in the marketing process, the processed seed leaves the company's store and goes to the wholesaler, who passes it on to the retailer. The retailer finally sells the seed to the farmer, who uses it for planting. The seed transaction ends at this point, although farmers may retain seed from subsequent harvests and exchange this among themselves as well as sell grain to final consumers.

Figure 30. Conventional seed distribution channel



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Marketing margins

A margin is the in the seed distribution channel. This means that the total margin is the difference between the price received by the contract grower for raw seed and the final retail price paid by the farmer who uses processed seed for planting. The retail price should cover the costs incurred for processing, storage and marketing services associated with the seed, including the costs of transport and promotion, as well as any profits.

As the seed goes down the distribution channel, its value changes, since the intermediaries incur costs at each stage and they too expect to make a profit. The cost of the seed builds up and the total cost of marketing the seed increases. The efficiency of a seed supply system depends on its capacity to distribute seed to farmers at the lowest possible cost.

Price determination

- **"Cost plus" pricing.** This is the typical method in commercial pricing. The seed enterprise needs to know the total cost and the components of the cost structure; it must understand how particular costs are incurred and how to influence the level of these costs. The estimated total cost includes all direct and indirect expenditure, whether fixed or variable. For the cost per unit of seed, divide the total cost by the volume of seed produced. Add a reasonable profit margin to the total cost to fix the selling price.
- **Pricing based on willingness to pay.** The selling price is based on the affordability and willingness of the farmer to pay a certain price for quality seed. The seed enterprise needs to know what prices other sellers charge for the same kind of seed.

Effective price determination involves a **combination of both methods**: calculate the full costs **and** have a good understanding of the final market conditions, particularly the prices competitors are asking.

Responsibility for seed distribution

Distribution relates to "place" in the marketing mix (Figure 14) and is the process of moving and making the right seed available to the farmer in the right quantity, at the right time, in the right place, in the right condition, and at the right price. The distribution pattern depends on whether sales are made directly to farmers, or through intermediate wholesalers and retailers.

- Right seed - packaged seed of the crop and variety desired by the farmer.
- Right quantity - amount of seed demanded by the farmer in relation to the area to be cultivated, considering also the appropriate packaging size.
- Right time - in time for planting (avoiding late delivery), considering that the need for seed is seasonally time bound.
- Right place - within the farmer's zone of mobility, taking transport costs into account.

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- Right condition - high and verifiable seed quality in terms of all attributes.
- Right price - a price the farmer can afford and is willing to pay.

In an organized seed enterprise, the sales service is essentially responsible for the operational aspects of seed distribution; in a small seed enterprise, one person may perform these functions. To ensure that distribution and sales are effectively managed, the seed must be accompanied by the relevant documentation (e.g. purchase orders, invoices, receipts and market information), which should be part of a reliable system recording every stage in the distribution channel.

After-sale service

The enterprise should ensure from the outset that customer service following the sale of the seed is an integral part of its marketing strategy. Good service can be the foundation of business growth, beginning with timely delivery of quality seed at an acceptable price. It is essential to continue to **care for customers** by providing an after-sale service to:

- deal efficiently with complaints;
- provide advice where necessary;
- request feedback on the seed's performance; and
- maintain customer loyalty.

DISTORTIONS IN THE SEED MARKET

In many developing countries, governments and development agencies, including NGOs, intervene in the seed market. This can lead to **market failure**, which is economically undesirable. Conventionally, market failure happens when the economic conditions are such that a market cannot reach supply and demand market equilibrium. Factors that may distort the private seed market include the following:

- **Subsidies.** In some countries, parastatal organizations may continuously receive hidden subsidies and public support, enabling them to **distribute free or cheap seed**, thereby creating distortions in the market. Such organizations have an advantage in the market: the private sector cannot compete on a level playing field. Subsidies – whether **direct or indirect** – can inhibit the emergence of new private seed enterprises.
- **Fake seed.** Inappropriate subsidy programmes can lead to **unfair competition** among seed suppliers, opening avenues for the emergence of unlicensed seed dealers and the distribution of poor-quality fake seed to farmers at low prices. Farmers may view this market distortion as a benefit, since they are able to buy "quality seed" from illegal seed sellers at a fraction of the retail cost, although the authenticity and quality of the purchase cannot be verified and there is no pertinent technical information with the seed.
- **Emergency seed distribution.** Government and other agencies are significant purchasers and distributors of seed in some countries. This can involve

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large seed orders, potentially from private suppliers. There is, however, the disadvantage that quantity requirements may be inconsistent or unpredictable, because **demand is often guided by disaster relief or political considerations.** Where emergency seed distribution becomes an established part of government or donor programmes, farmers may become dependent on these free sources of seed and not motivated to purchase.

EXERCISES AND DISCUSSION POINTS

1. In many business organizations, marketing and sales do not get along very well. Describe what results you would expect in a business organization.
2. In terms of your business, which of the 4Ps in the marketing mix do you consider most important and why?
3. Think of your favourite seed. What was the price of this seed the last time you purchased it? Sketch a graph to show the supply and demand for this seed, with the price the last time you purchased it shown as the equilibrium price. On your graph, show what happens when the price for the seed increases or decreases. How will the quantity demanded change? What might cause an increase in demand for your favourite seed?
4. What do you understand by price elasticity of demand? Distinguish between price elastic demand and price inelastic demand. What are the pricing implications of each type of elasticity?

② Researching the seed market

Researching the seed market

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The key to a successful seed business is understanding the nature of demand in your seed market – **what kind of seed do your farmers want?** You must then provide it in a way that makes economic sense to the farmers and your enterprise. It could be a serious mistake to assume what your farmers want without asking them.

In order to understand your farmers' exact requirements, you must undertake **market research**. Gather information about the varieties and seeds of your company and your competitors, about farmers and the marketplace, to make informed decisions about your seed business and be more responsive to the needs of your customers.

This section of the module provides a basic understanding of the concept of market research, outlines the various types of market research, describes its different uses and provides guidance on designing a market research questionnaire for your small enterprise.

WHAT IS MARKET RESEARCH?

Market research is the process of **gathering information** about your prospective or existing **market**, the kinds of **customers** in the market and the nature of **competition**.

Market research can help you learn more about the farmers you intend to sell your seed to: what they want, know, need and believe, and how they behave. It enables you to identify and analyse the market size and requirements, as well as any potential competition.

With market research, you can understand your customer's buying habits, discover how much they might pay for a new product – for example, a specific species/variety currently unknown to farmers but which could fit very well into their crop rotation – and thus recognize potential future demand ahead of your competitors.

In summary, market research allows you to:

- determine the feasibility of your new seed package;
- understand the extra value your product will bring to agricultural production;
- identify ways to promote your product;
- differentiate your product; and
- develop a competitive strategy.

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WHY CONDUCT MARKET RESEARCH?

Successful businesses possess comprehensive knowledge about their customers and their competitors. Obtaining accurate and specific **information about customers and competitors** is a critical first step in market research and the development of a marketing plan.

A **marketing plan** is necessary to understand the **needs and desires of customers**. You can then supply the kind of seed that meets their needs and develop promotional material to make them aware of the seed's attributes. Market research can help you:

- identify the characteristics and preferences of your customers;
- understand any production problems your customers may have and find products that may solve their problems (weeds, pests, early/late maturing);
- identify opportunities to increase and make your business grow;
- recognize and plan for problems in your seed industry and in the economy at large;
- monitor the competition in your seed market; and
- minimize risk by making informed business decisions.

Information gathered about changes to your company's marketing mix (combination of the 4Ps) can put your business in the **best possible position to reach your target market**.

WHAT ARE THE COMMON TYPES OF MARKET RESEARCH?

Depending on the type of investigation, and the procedures and methodology used to analyse the market data collected, there are **different types of market** research:

- **Market segmentation research** – captures specific needs, values, attitudes, behaviours and demographics within the market. This enables the **efficient and effective targeting** of specific groups in the market, for example, commercial/subsistence farmers, small/big farms, farmers focused on cattle/grain production.
- **Product testing research** – obtains a detailed understanding of how a new product meets (or does not meet) customer needs. You can make **informed decisions** about which improvements to prioritize before launching or relaunching a product, with savings in money, time and effort.
- **Advertisement testing research** – takes potential campaigns directly to the audience and gauges their response. You can focus on creating truly **impactful advertising**, with **savings** in valuable time and resources.
- **Satisfaction and loyalty research** – identifies key drivers of satisfaction and assesses the likelihood that customers will continue using a company's prod-

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ucts and services. By **measuring customer satisfaction**, you can ascertain the proportion of customers that are returning customers who purchased the previous year.

- **Brand awareness and usage research** – tests how effective brand marketing campaigns really are in reaching and convincing customers.
- **Pricing research** – identifies the most valuable product features for customers and gauges their willingness to pay. The most common method is "conjoint analysis" – customers are asked to choose between different products with unique features and price points. The insights gained, combined with basic information on competitors' pricing, can give a distinct **advantage in pricing products and services**.

Each type of market research relies on a specific methodology, typically involving the **relevant data** and information.

WHEN TO CONDUCT MARKET RESEARCH?

Market research is beneficial at any stage of a business, but is particularly useful during the **start-up phase** of a new enterprise when it is necessary to demonstrate that a **potential market** exists for a product or service. The information collected at this stage is useful for preparing various sections of the business plan. A **new enterprise can use market research to**:

- determine sales potential;
- identify the demographic profile of the target market;
- select an appropriate business location;
- set a price; and
- develop a marketing plan.

For **existing businesses**, market research helps ensure that they continue providing good customer service, and may be particularly useful when significant changes are envisaged, such as an expansion or relocation. An **existing business can use market research to:**

- keep up to date with the market trends;
- stay ahead of competition;
- improve the potential of current business activities; and
- seek out new markets and plan for growth potential

HOW TO CONDUCT MARKET RESEARCH?

Before undertaking market research, it is essential to **decide what you need to know and why**. For data collection, there are two types of market research: primary and secondary.

- **Primary research** – undertaken when companies wish to gather data for

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their own use. The objective of primary research is to obtain **new information** (not otherwise available) about customers' attitudes, preferences, purchasing habits, tastes and behaviour.

- **Secondary research** – involves searching for **existing information**, such as demographic data and industrial statistics that have already been collected and possibly analysed.

Primary market research tools

Several tools are available to collect first-hand data or information from potential customers. Most businesses use one or more of five basic methods: questionnaires and sample surveys, focus groups, personal or key informant interviews, direct observation, and field trials.

Surveys

Surveys are perhaps the best known and most widely used method of market research. The **conditions** for an effective survey are:

- relatively large population to investigate;
- specific parameters to measure; and
- desire for objectivity (or quantitativeness).

A survey can be utilized to:

- gauge customer satisfaction;
- measure customer behaviour;
- determine prices; and
- gather facts.

Measuring **customer satisfaction** is particularly important because satisfaction can be a good indicator of loyalty and future behaviour. For example, it is

Figure 31. Tools used in primary market research

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possible to determine the likelihood of customers buying seed again and/or the possibility of them referring to others.

A **concise and straightforward** questionnaire is a simple and useful tool for analysing a representative sample of the target market in order to obtain **constructive feedback** from existing and potential customers. The larger the sample (at least 30 individuals), the more reliable the results.

A questionnaire survey may be:

- self-administered – the respondent reads and answers the questions alone (e.g. through a form received by direct mail or e-mail, or using survey tools on the Internet); or
- conducted by a person who also records the answers (e.g. in person or over the telephone).

The different **types of questionnaire** are described below:

Mail surveys: These are a – relatively **inexpensive** way to reach **a broad audience**. Although much cheaper than in-person and phone surveys, they often generate **low response rates**. Despite the low return, mail surveys remain a cost-effective choice for small businesses.

Online surveys – simple, **inexpensive** way to collect **anecdotal evidence** and gather customer opinions and preferences. However, since there is no control over the pool of respondents, the response rates can be **unpredictable** and the data are usually erratic in nature.

Figure 32. Administering a questionnaire in an African village

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In-person surveys – one-on-one interviews, which also allow customers to see samples of products, packaging or advertising and provide **immediate feedback.** While in-person surveys can generate **high response rates**, they tend to be **costly**.

Telephone surveys – less expensive than in-person surveys, but more costly than mail surveys. Due to consumer resistance to relentless telemarketing, convincing people to participate in phone surveys is increasingly difficult

For a good questionnaire and survey, bear in mind the following **guidelines**:

- Start with an **introduction** to express clearly what you are trying to investigate and how valued their response is. Provide **easy-to-follow instructions**.
- Ensure that the questions follow a **logical order** and evolve from general to specific.
- When possible, provide **multiple choice answers** for the questions you ask in order to reduce the amount of time needed to complete the survey.
- Ask **concrete** questions. Avoid words like "would, could, should, might, will, won't". Ask what they do or have done, not what they would do.
- Keep questions short and simple. In particular, avoid complicated technical terms and jargon, abbreviations and double negatives. Questions must carry the same easy meaning for all respondents.

  Poor: How often do you promote the attributes of your seed to a wide audience?
  Better: How often do you advertise your seed on TV?
  Tick one

  __ Once a day
  __ Several times a day
  __ Once a week
  __ Several times a week
  __ Once a month
  __ Several times a month

- When applicable, use a **consistent rating scale** throughout the survey. For example, if the scale is from 1 to 5 (with 5 the most positive and 1 the least), adopt the same scale for all questions requiring a rating to avoid confusion or errors.
- Make questions requiring binary answers **concrete**.
  Poor: Did you appreciate the new rice variety?
  Better: Have you recommended the new rice variety to anyone else?
  0 = No
  1 = Yes

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- Do not use double-barrelled questions: cover **one issue only** per question.
  Poor: Do you think that there is a good market for your seed and that it will sell well?
  Better: Have you sold more than 60% of your seed?
  0 = No
  1 = Yes

- Be **concise** when asking a question seeking differing views. Rank your responses.
  Poor: How do you feel about new enterprises selling quality seed of a crop?
  Better: All new enterprises should sell quality seed of only one crop.
  1 = Strongly agree
  2 = Agree
  3 = Disagree
  4 = Strongly disagree

- Avoid leading questions that may generate a false positive response.
  Poor: How great was the new variety promoted by our excellent seed company?
  Better: How was the performance of the new variety promoted by our seed company?

- Limit the use of "skip" patterns. For example:
  Do you attend seed fairs in your region?
  0 = No (go to Question number 3)
  1 = Yes (Tick all seed fair locations that apply)

- Be **cautious** when asking personal or sensitive questions.
  Poor: How much is your current profit level? $ _ _ _ _ _ _ _
  Better: Select the category that best describes your current profit level.
  _ _ Less than $20 000
  _ _ $20 001 – 59 999
  _ _ $60 000 – 99 999
  _ _ More than $100 000

- **Pre-test** your survey on a limited number of respondents before releasing it for wider use. **Assess** your survey with test respondents to determine if the questions are appropriate, and easy to understand and answer. **Review and revise** your questionnaire accordingly.

Focus groups

A survey may not be a suitable research tool when you are still exploring a topic and do not yet know the specific or correct questions to include in your questionnaire. A focus group discussion is a means to gain a **better understanding** of the topic, specifically:

- obtain information on general customer attitudes;
- understand why customers would purchase a particular product; and
- learn what the desired outcome would be from purchasing a product.

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Focus groups are **moderated group interviews and brainstorming sessions**, ideally involving a group of key informants who come together to discuss a topic in an open manner. The session generally takes place under the guidance of a qualified and knowledgeable research moderator using a scripted series of questions or topics to lead the discussion. The moderator's role is to ask the required questions, draw out answers, and encourage discussion. Focus group discussions may last about an hour.

A focus group is an effective tool to use **prior to a survey** because it can inform the survey questions and make them more specific and targeted. For example:

You wish to release a new high-yielding rice variety for rainfed areas and do not know about the general performance of all rainfed rice varieties in the area. You hold a focus group discussion with farmers who live in rainfed areas and ask them open-ended questions about what they value in their rice varieties. After exploring the topic and discovering key variety attributes, you can measure their relative importance in a survey.

Figure 33. A moderated focus group discussion

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Focus groups can also be beneficial **after a survey**, enabling in-depth examination of a topic that emerged prominently in a survey. For example:

A farmer satisfaction survey reveals that access to inputs is an overriding issue in extension. You organize a follow-up focus group discussion with a group of farmers to understand the issue of inputs. The group considers certain factors in detail, such as price, quality and timely availability.

Interviews

Like focus groups, key informant and personal interviews use mostly semi-structured discussions. They are based on open-ended questions and are useful for **exploratory research**.

Individual interviews are focus groups with only one participant and one moderator (interviewer). This market research method is particularly useful when you wish to examine deeply a specific issue, pinpoint customer problems and understand psychological motivations and underlying perceptions. Personal interviews are appropriate under **certain circumstances**:

- The topic of discussion is personal or sensitive.
- Opinions are subject to influence by others.
- Concerned stakeholders are geographically spread out (making it difficult to convene a focus group).
- The stakeholders are competitors who may be reluctant to share information in a group setting.

The **interview format varies** depending on its objective. An interview can be a free-flowing conversation on a given topic, or highly structured with very specific questions. It usually lasts about an hour and is often recorded.
Both **focus groups and personal interviews provide more subjective data than questionnaire surveys**. There is no statistical analysis of the results, but they provide valuable insights into customer attitudes and are a useful means to uncover issues related to new product development.

Direct observation

Individual responses to surveys and focus groups do not always match the actual behaviour of customers. Those interviewed tend to act differently because they know they are being observed or they may tell the interviewer what they think he or she wants (or in some cases, does not want) to hear. On the contrary, when consumers are observed in action in their natural setting, such as a store, it is possible to see how they buy a product and therefore gain a more **accurate picture** of their shopping patterns or behaviour.

Direct observation is one form of observational testing and is one of the oldest techniques adopted in market research. It is particularly useful in **exploratory and descriptive** research. Market observation can be human or mechanical – **human**

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observation involves a person watching, while **mechanical observation** involves the use of machines (e.g. a video camera in a public setting). For example:

An in-store observation (whether human or mechanical) entails simply watching *shoppers in action as they go through the store. How do they go through the store? What do they notice? What attracts them in particular?*

The greatest advantage of direct observation is that it assesses **actual behaviour** that is a direct reflection of a real-life situation, as opposed to customer-reported behaviour. This avoids the problem of customers reporting one thing in a survey but behaving otherwise in practice.

Field trials

Another form of observational testing is the field trial. A new product is placed in selected outlets to test **customer response under real-life selling conditions**. The observations made are useful for modifying the product, adjusting prices, or improving the packaging. This technique is useful for small businesses who wish to test their products in small retail shops in the local community. For example:
A small enterprise makes two different seed packaging designs and sends limited quantities to test market stores in order to assess the individual sales.

When adopting **observational testing** methods, consider the following key points:

- Is it compatible with your research objectives and questions?
- How will it add value to your research in comparison with other methods?
- Are there any ethical, access or other issues that might make observations difficult?
- How will you collect your observational data? (structured template, unstructured or semi-structured)

Secondary market research tools

Before undertaking primary research to obtain new or first-hand information, it is important to ask: Does the desired information already exist in some form? The results and conclusions of any related research may be useful, and resources must not be wasted seeking information that is already available. Secondary research is therefore simply the process of **examining existing research and data**. It is usually less expensive and takes less time to gather than primary research.

While primary research is the direct gathering of information from individuals for a new research project, secondary research is the gathering and analysing of data already collected for another project. It often involves considerable desk research and a thorough review of the literature.

Secondary market research data can be obtained from internal and external sources.

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Internal sources

Internal sources are data that already exist within an enterprise or useful information already collected by the company relevant to marketing activities. Existing enterprises provide numerous sources of information, for example:

- **Internal publications**
- **Web sites**
- **Historical business records, including:**
  - balance sheets (provide figures and statistics useful for assessing business strength, such as the company's liquidity level for meeting payment obligations);
  - profit and loss statements (supply information on different kinds of products and their profit potential);
  - inventory records (provide figures on the efficiency of inventory management in line with customer demand for various products);
  - sales figures (may be analysed to investigate issues including the effectiveness of promotional campaigns and efforts to increase market share) and purchase receipts.

External sources

External sources refer to the wide range of sources existing outside the business's environment. They provide data collected by other businesses or organizations, for example:

- **Government or public offices**. Government agencies gather a wide range of useful information on many subjects across different sectors and of relevance to market research, including agricultural statistics, production and trade statistics, social surveys, and family expenditure surveys. Government-designated units or agencies often publish official statistics for public use. Many government departments also publish technical reports.
- **International research and development agencies or organizations**. CGIAR Centers and international agencies (e.g. WB, IMF, FAO, UNDP and IFAD) produce secondary data and technical reports useful for market research.
- **Private sector and other commercial services.** Other businesses may produce market research reports and additional publications containing information on market structure, consumer profiles and demand analysis.
- **Universities and other educational institutions.** Many university researchers and students collect and analyse research information of use to businesses.
- **Non-governmental and civil society organizations.** NGOs and CSOs produce annual reports and other materials that may contain relevant data.
- **Peer-reviewed scholarly journals**. Academic journals generally contain articles with original research prepared by experts in specific fields. The articles usually undergo a peer review for accuracy, originality and relevance.

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- **Reference books.** Handbooks, manuals, encyclopedias, dictionaries and other reference materials can provide useful secondary information on relevant market research topics.
- **The Internet.** The Internet is the most widely used secondary market research tool. However, it has the disadvantage of including numerous non-credible sources providing incomplete information.

WHAT TYPES OF INFORMATION DOES MARKET RESEARCH GENERATE?

Market research (both primary and secondary) collects two kinds of information: **quantitative** and **qualitative**. The research method adopted depends on the type of information needed about the market, customers and competitors; this in turn depends on the research objectives. Nevertheless, a **combination** of quantitative and qualitative results is generally preferable.

Quantitative data

Quantitative research is numerically oriented, requires measurement of market phenomena (e.g. frequency of customer return, sales figures, product sales numbers, market trends etc.) and often involves statistical analysis. It is **based on hard facts** and statistical data rather than the feelings and opinions of customers. It can help understand the demographics of your customers (e.g. age and gender), identify the size of your market and its value to your business, and pinpoint areas for sales growth.

Quantitative data are normally obtained through market research **surveys**, involving structured questionnaires to collect data. For example:

A seed company asks farmers to rate its overall service as excellent (4), good (3), poor (2) or very poor (1). The results provide quantitative information that can be analysed statistically.

Quantitative research normally:
- adopts a structured approach;
- involves large numbers of respondents; and
- uses the same questions for all respondents.

Quantitative surveys can be conducted face-to-face, online, or by direct mail, telephone or e-mail.

Qualitative data

Qualitative data are **based on opinions and feelings** of customers with regard to a business's products or services. Qualitative research tries to probe into customers' minds and discover what is considered to be lacking in a particular product or whether a product is liked or not.

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A widely used research tool for acquiring qualitative data is the **face-to-face interview**. For example:

A market researcher approaches a customer who has purchased a particular type of pepper seed and asks why they chose that type of pepper.

Unlike quantitative research, there is no structured set of questions. Qualitative research normally:

- uses a topic or discussion guide to explore in depth various issues; and
- allows the respondent's own thoughts and feelings to determine the discussion between the interviewer (or moderator) and the respondent.

DATA FOR SEED MARKET PLANNNING

Obtaining data for a marketing plan

First, adopt market research to obtain comprehensive information about customers and competitors in order to understand customers' needs and desires.

Second, acquire and analyse both quantitative and qualitative information about the target seed market (the market currently buying the kind of seed the business will sell) and about the key factors influencing customers' buying decisions. Depending on the information to be collected, market research will involve the use of primary and secondary research methods and a combination of market research tools. Table 1 outlines the areas of research, the key research questions to address and the research methods or tools to use.

Table 1. Obtaining data for a seed marketing plan

Area of market research	Key research questions	Research methods/tools
Assessing changes in market dynamics and patterns (e.g. pricing and seasonality)	What is the changing cost of doing seed business in different seasons? What is your seed production cost? What is your break-even point? How much do you need to charge to be profitable? How much are customers able to afford and willing to pay for your seed? What are your competitors charging?	Questionnaire survey (quantitative data)
Examining the available product (seeds/varieties)	What seeds/varieties are out there now? What are your competitors offering? Are there new or improved varieties, types of seed or accompanying services?	Focus group Key informant interview (qualitative data)
Carrying out competitive analysis: visiting the location of competitors (if possible), browsing their Web site, talking to their customers	Who are your major competitors? What are their products, pricing, strengths and weaknesses? How much do they spend on brand positioning, advertising and promotional sales? How else do they reach customers? Have they entered new seed markets or product territories? What benefits or value do your competitors' products offer? How do your varieties/seeds differ from those of your competitors?	Personal interview Secondary research (qualitative data)
Determining ideal customers and their profile (demographics, market segment, needs, perceptions, seed-buying decisions)	What is your current customer base (age, sex, income, geographic location)? Where do they shop? What do they read, watch and listen to? Which potential customers are you currently not reaching? How can you reach them? What qualities do your customers value most about your seeds or service? What qualities do potential customers want you to change about your seeds or service? What are the advantages and consequences of modifying these?	Questionnaire survey Focus group (quantitative/qualitative data)
Testing customer perceptions	What is the perception of customers towards brands and images from competing companies? What is their attitude towards packaging? What position does your brand occupy in the market compared with your competitors? What attributes influence customer loyalty to particular brands or companies?	Focus group Personal interview (qualitative data)
Gauging performance of economy and buyer confidence	How confident are consumers about the overall state of the economy now and in the foreseeable future? How confident do customers feel about their earning capacity and income stability? How do these factors influence their spending decisions or behaviour? Will seed purchase remain a priority in their spending package?	Focus group Personal interview (qualitative data)
Assessing past and current levels of seed sales to determine sales trend analysis	What is the overall volume of seed sales per season or year? What is the rate of growth of seed sales in different regions or market segments? What is the rate of growth in seed sales per customer (especially major ones)?	Questionnaire survey (quantitative data)
Measuring and benchmarking satisfaction of your customers and that of competitors' customers	How satisfied are your customers with the seed your company provides? Overall, how is the experience of customers in dealing with your seed company? How likely are customers to re-purchase your seed? How likely are they to purchase related products from your company? How likely are customers to recommend your seed to other farmers?	Focus group Personal interview (qualitative data)
Determining reliable suppliers	Which vendors will you need or rely on to effectively produce and market your seed?	Focus group Personal interview (qualitative data)
Capturing key criteria for SWOT analysis		Secondary research (internal) (qualitative data)

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What next after collecting your market data?

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- Organize and summarize your data. Given the considerable amount of information needed, it is essential to organize and summarize the material collected.
- Decide how best to present your data. In order to make comparisons and find patterns, present the results in a simple way using, for example, bar charts, pie charts, graphs and tables.
- Decide on where to include your results. Depending on the size of your charts or graphs, incorporate the information gathered within the main body of the marketing plan or include it in an appendix with a summary of the findings in the main report.
- Present statistical data for comparison. Compare the statistics gathered to ascertain, for example, average income, purchase frequency, mean expenditure, population size, male/female percentage and number of households.
- Assess the results of your survey to find your target market. An evaluation of the results enables you to answer many questions:
  Who is buying?
  How many customers are there?
  How often do they buy?
  Where are they buying now?
  What do they like?
  What do they not like?
- Determine your key findings. Draw conclusions, answering questions such as:
  What is the size of your potential market?
  What is the nature of the competition?
  What is your estimated market share?

EXERCISES AND DISCUSSION POINTS

1. The market research process involves deciding whether to use primary or secondary data. Explain the main differences between the two types of data.
2. Why should one be cautious when using secondary data? Give examples of four questions that market researchers should ask themselves about these data.
3. Give examples of two other interview methods. Highlight their advantages compared to focus groups.
4. How do you assess that different methods you use in observational research to discover how consumers really act in the marketplace give reliable results?

③ Strategies for effective seed marketing

Strategies for effective seed marketing

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The concept of marketing mix (discussed in Chapter 1) refers to how an enterprise is carrying out "marketing" when it decides what **products** to sell, what **price** to ask, in what place to sell them and how to **promote** them (the **4Ps**). Once an enterprise decides to enter the supply market and sell a product, it is important to define a clear means - **a marketing strategy** - to:

- reach its target customers;
- sell the product; and
- distinguish itself from competitors.

There is no one-size-fits-all approach to targeting consumers. Examine the different options or strategies, then choose the best way(s) to reach the target customers and meet their specific needs or demand under the prevailing circumstances. Important options to consider include mass marketing, segment marketing, price discrimination, niche marketing and product positioning.

MASS MARKETING

In a mass marketing (or "undifferentiated marketing") strategy, an enterprise appeals to its entire market with a **unique product** and accompanying **message**. The mass market is usually large and undifferentiated, comprising consumers from a wide range of backgrounds. Mass marketing is effective when there is **high demand** from **many customers** in the market.

Radio, television and newspapers are the most widely adopted means for reaching mass-market audiences with uniform advertising messages. The main advantage of advertising to the mass market is **cost efficiency**: reaching a large audience in a single moment results in economies of scale.

Agricultural inputs (e.g. seed, fertilizer and crop protection products) account for important markets in any country. The **seed market** is significant: it is **large** and handles a **key input**. Nevertheless, mass marketing is difficult for small-scale seed suppliers to apply, because this strategy is appropriate when farmers want (or are willing to purchase) the same kind of seed or variety. The reality is that **seed markets are not homogeneous**: the natural resource base supporting crop production is diverse in terms of soil, topography and climate, while the market itself comprises various types of buyers with different seed needs. For this reason, mass marketing in seed is only **feasible in specific cases**, for example, when seed is produced from a productive crop variety, widely adapted and suitable for cultivation over a wide area or in different agro-ecological conditions, and demanded by most farmers. A new business

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may choose to sell seed of such varieties in order to increase market awareness of the enterprise.

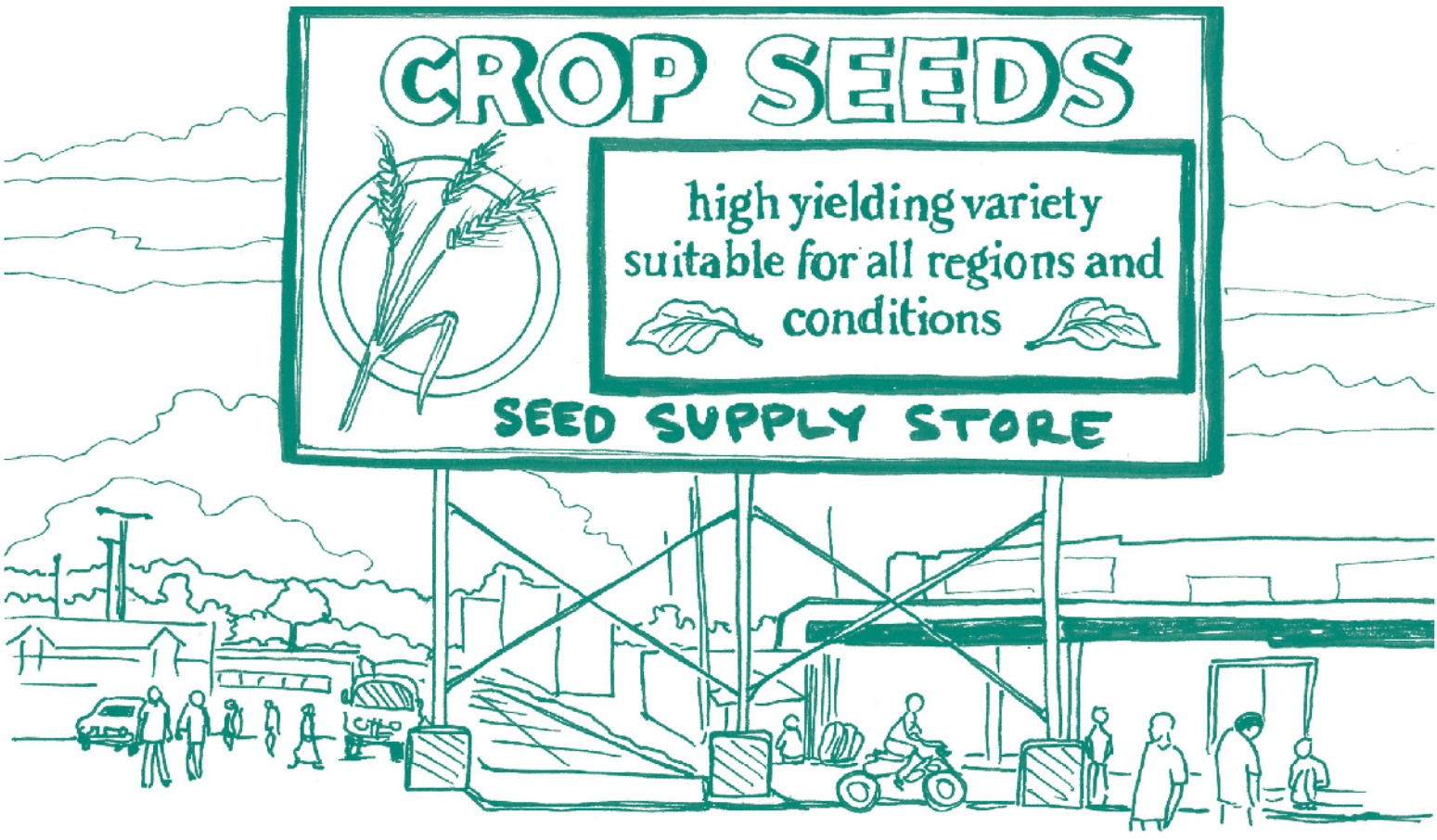
Despite the cost efficiency of mass marketing, the strategy does not work when farmers require seeds or varieties specific to their unique microenvironments. The seed enterprise must consider alternative strategies, such as segment or niche marketing.

SEGMENT MARKETING

In segment marketing, the mass market is subdivided into **distinctive subsets** of relevant customers with similar behaviours and needs. Market segmentation divides a heterogeneous market of farmers into relatively **homogeneous groups** with **distinct characteristics**, particularly with regard to the purchasing profile of the farmers.

Market segmentation offers a solution to the inherent weakness of mass marketing in seeds, because it takes into account the fact that **farmers are not a homogeneous group**, nor do they buy seeds in the same way. They differ in terms of, for example, farm size, educational background, age, location, land tenure, attitudes, risk management practices and technology adoption. Mass markets can be further diversified into smaller segments and seed markets

Figure 34. Billboard advertising



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can be segmented according to psychology, purchasing habits, demographics, income, agro-ecology, and region or location.

In seed marketing, the main purpose of market segmentation is to divide farmers into distinctive market segments according to their purchasing behaviour or seed-buying characteristics. Through segmentation, seed enterprises are able to get closer to their customers by designing an appropriate marketing mix that enables them to target customers with specific profiles and needs.

A detailed analysis of the factors determining how farmers are segmented may signal the need for **alternative marketing strategies**. For example, if income is an overriding factor in segmentation, it may be appropriate to consider a niche marketing strategy (explained in the next section).

The seed market in many countries is divided into two main segments:

- **formal** – for major crops; and
- **informal** – for self-pollinated crops.

Some crops, such as certain food legumes and cereals, are self-pollinated and farmers can save seed from the previous harvest. Indeed, seed companies often make a profit on only a fraction of the seeds sold in the market, i.e. **quality seed of improved varieties** sold in the formal market; other seeds are sold in the informal market.

Seed companies may adopt separate marketing strategies to distinguish between different segments of the seed market of a particular crop, creating **three main submarkets**:

Figure 35. Broad segmentation of seed markets in many countries

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1. **Subsistence market** - farmers who select their own seed of local varieties and never use quality seed of improved varieties.
2. **Semi-commercial market** - farmers who occasionally purchase quality seed of improved varieties but predominantly use open-pollinated varieties (OPVs).
3. **Commercial market** - farmers who purchase quality seed of improved varieties each season and mostly go for hybrid varieties.

Large private seed companies usually target the **commercial market**, where the demand for quality seed is strong and sustained. However, there may be more competition between seed companies in this segment and some seed companies may not be able to compete effectively. For this reason, **small localized companies** may also target the semi-commercial market, despite the limited opportunities for profit. **Transnational companies** concentrate exclusively on the **commercial market**, specializing in the development and production of high-yielding hybrids suited to the needs of commercial farmers.

In communication and advertising, targeting specific segments or geographic regions via the media (e.g. magazines, Web sites and billboards) costs less than mass-market media.

Despite its usefulness, segmentation has **limitations**, especially for small enterprises:

Figure 36. Subsistence market segment

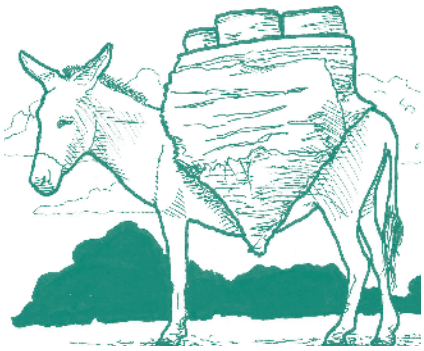
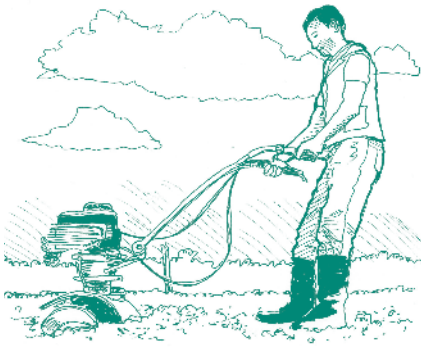


Figure 37. Semi-commercial market segment



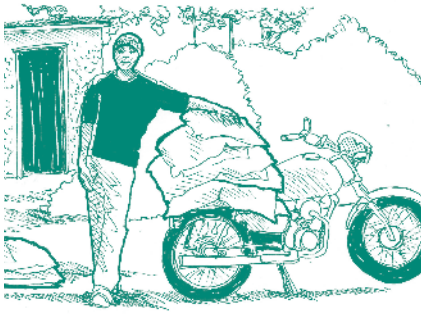
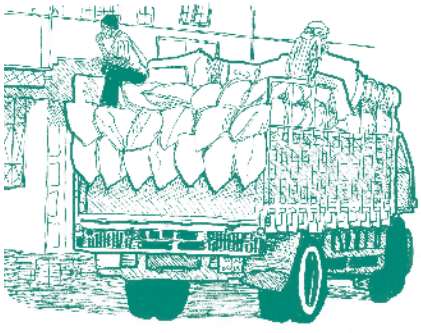


Figure 38. Commercial market segment



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- **Increased costs** – a company may attempt to serve several market segments with different products, resulting in increased expenditure for promotion and distribution when separate programmes are used for different market segments.
- **Over-segmentation** – groups can become too small to be profitable targets.
- **Segment transformation** – the characteristics of a market segment may change, rendering an investment useless.

PRICE DISCRIMINATION

Price discrimination is a **pricing strategy** used by companies to charge **different customers a different price** for the same product or service.

How does price discrimination work?

The seller arranges customers in segments based on certain attributes, and charges each segment a different price. Price discrimination is a **profit maximization** strategy: the profit made by separating the market into segments is greater than the profit made by keeping the markets combined. This depends on the **relative elasticity of demand** in the submarkets or segments. Consumers in an inelastic submarket are charged a higher price, whereas those in a relatively elastic segment are charged a lower price.

Conditions for effective price discrimination

- First, the company identifies different **market segments** with different elasticity of demand for its product.
- Second, there must be **no overlap**. Markets must be separate in terms of time, physical distance and nature of use, so that consumers who purchase at a lower price in the elastic submarket are not able to resell at a higher price in the inelastic submarket.
- Third, the company must exert a **monopoly** to make price discrimination more effective. A monopoly is a situation in which one business entity exercises exclusive dominance or control of a commodity or service in a particular market, usually through the manipulation of prices.

Industries use price discrimination to increase revenue. **Price discrimination can be based on:**

- volume of product purchased;
- age;
- location; or
- desire for the product.

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Equilibrium of a discriminating monopolist

For the analysis of equilibrium conditions, it is necessary to understand the following:

- **Marginal cost (MC)** – the increase/decrease (incremental change) in the cost of producing one more unit or serving one more customer. The MC of an item is its variable cost, i.e. the **sum** of the direct materials and labour costs, direct expenses (if any) and variable production overheads (e.g. administrative overheads and selling expenses). Therefore, as the volume of production and sales increases, the total variable costs rise proportionately. Marginal cost is **not based on fixed costs** incurred by the company (whether or not it increases production).

- **Marginal revenue (MR)** – the change in total revenue divided by the change in total quantity sold. Therefore, the sale price of a single additional item sold will equal the MR. For example, a company sells 100 items for a total of $1 000. If it sells the next item for $8, the marginal revenue of the 101st item is $8. Marginal revenue disregards the previous average price of $10, as it only analyses the incremental change.

- **Average revenue (AR)** – the total sales revenue earned by a business divided by the total units sold. A competitive enterprise's MR always equals the AR and price, because the price remains constant. In a monopoly, because the price changes as the quantity sold changes, marginal revenue diminishes and will always be equal to or less than average revenue.

Both an ordinary and a discrimi¬nating monopolist reach **equilibrium when MC = MR**.

For example:
Let us assume that a monopolist sells a product in two submarkets: A and B. To maximize profit, a discriminating monopolist must decide:
- the quantity to produce; and
- how to allocate the quantity produced in submarkets and at what price.

Given that for equilibrium, MC = MR, the equilibrium condition is as follows:
- MC_A = MRA (in submarket A)
- MC_B = MRB (in submarket B)
- $MC_T = MR_A + MR_B$ (in the combined market or industry)

The demand curve and MR curves of submarket A are D_A and MR_A. Similarly, the demand curve and MR curves of submarket B are D_B and MR_B. By combining D_A and D_B curves, a combined D_T curve is obtained. The corresponding combined MR curve is $MR_T = MR_A + MR_B$.

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For equilibrium of the discriminating monopolist, MR = MC. This occurs at point E in the industry. In the aggregate market, the monopolist produces OQ output. Without price discrimination, the monopolist would have charged a uniform price QR for all buyers. **Price discrimination results in increased profit.**

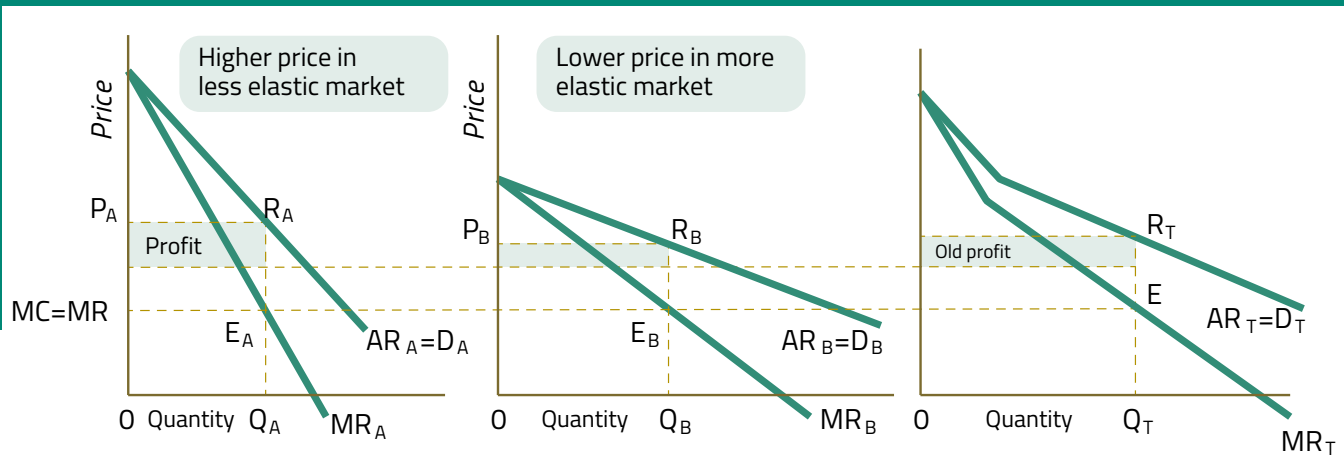
The monopolist places the total product OQ in submarkets A and B so that marginal revenues in all markets are the same (EQ = E_AQ_A= E_BQ_B). Therefore, OQ_A must be sold in market A and OQ_B in market B (since OQ = OQ_A + OQ_B). The monopolist charges price OP_A in market A for output OQ_A, and OP_B in market B for output OQ_B.

The total revenue from the sale of OQ_A in market A is $OP_AR_AQ_A$, and the total revenue from the sale of OP_B in market B is $OP_BR_BQ_B$. The sum of these two revenues ($OP_AR_AQ_A$ + $OP_BR_BQ_B$) exceeds the total revenue of the monopolist (OQ_T × R_TQ_T). The shaded portions in submarket A and submarket B (figure 39) indicate the profit enjoyed by the discriminating monopolist in submarkets A and B compared with the old profit in the aggregate market.

Price discrimination is profitable. Moreover, it should be remembered that in a submarket with relatively low elasticity, the price is higher, while in a submarket with relatively high elasticity, the price is lower. As submarket A is less sensitive than submarket B to price changes, the price in submarket A is higher than in submarket B (OP_A> OP_B).

If elasticities of demand are uniform in all submarkets, it is neither possible nor profitable to discriminate between buyers. In this case, the monopolist charges the same price to all buyers. If demand varies, the monopolist charges a higher (lower) price in the market in which demand is less (more) elastic.

Figure 39. Price discrimination in submarkets and at industry level



Less elastic submarket (A) *More elastic submarket (B)* *Combined (industry)*

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Price discrimination in seed marketing

In some countries, there is no regulation of seed prices: seed producers set whatever prices they choose for their products. As a result, there are marked differences between the pricing strategies pursued by different types of producers.

A **uniform pricing** strategy is often adopted by **small enterprises**: they charge a single price for seed of all varieties of a crop regardless of differences in yield potential and production costs. They thus avoid the additional costs incurred by maintaining a policy of differentiated prices (e.g. accounting and promotion costs), and instead establish a uniform price to cover all fixed and variable costs, generating a modest profit.

A strategy of **price discrimination** is more likely to be chosen by **larger companies**: prices vary depending on type of material and sales region. Other factors influencing seed pricing strategies are type of variety (especially in the case of hybrids), expected strength of demand (elasticities) and inventory levels. Prices may be set higher in regions where cultivation of a specific crop is particularly productive and profitable.

NICHE MARKETING

What is niche marketing?

Niche marketing is a strategy used by companies to target a relatively small group of customers that make up a specific market segment, which is unique in terms of preferences and needs of customers in that segment. It is a small subset of an entire market or a clearly targeted market segment, where homogeneous buyers with similar needs exist. Niche marketing therefore responds to the unique preferences and needs of the customers by giving them what they want rather than trying to convince these customers to accept what everyone else seems to want, as in the mass market. The more distinct the product and the more satisfied the customers are in the niche market, the higher the potential premium in value over similar products available in mass markets.

Niche markets are often created. Therefore, the company requires imagination and willingness to look at things in a new way, in addition to courage, dedication and intelligence to try something new and make it work. Niche marketing involves identifying and knowing what a group of customers need and then trying to deliver a better solution to a problem that has not been addressed adequately by other companies.

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Advantages of niche marketing

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- **Less competition.** The company is virtually the **market leader**, with little or no competition in its niche. It enjoys a **price monopoly**. The lack of competition places the company in a position to produce, process and deliver something of high value to the target consumers, different from anything available elsewhere.
- **Space for small companies**. Small firms can use niche marketing to **avoid direct competition** with large companies in a given industry. They can focus their limited resources on niches that may be unimportant or overlooked by larger competitors.
- **Increased brand loyalty.** Although niche businesses are often **high margin** in nature, the company and its brand are the **sole source** of a particular service or product and customers do not mind paying a little extra. Brand loyalty increases and the consumer base remains with the company for a long time.
- **Strong relationship with customers.** The company operates in a **small segment**, resulting in a strong relationship between the customers and the brand, which is also a key to **customer loyalty**.

Niche markets in seeds

Niche marketing is particularly suited to **small, management-intensive farming operations**. Niche markets focus on **value rather than cost**, avoiding head-to-head competition with mass marketers. Opportunities for niche marketing in seed production exist in many areas:

- **Seeds of organic crops.** Organic vegetables are a prime example of a successful niche market. The differences between organic and conventional crops begin with the land used and the farming methods adopted and continue in the marketing system through to the final customer. Rather than "minimizing costs", niche marketing focuses on **"maximizing value"** for the customer.
- **Emergence of specific niche market crops.** Advancement in value addition can create new and unique opportunities. There are an increasing number of local microbreweries and distillers demanding grain of new sorghum or malting barley varieties with specified protein and starch content, sold for an increased premium. Likewise, there is a growing demand for grain from emerging local livestock feed companies, millers and artisan bakeries. A seed producer can choose to **specialize** in providing a group of farmers with seeds of the desired varieties.
- **Unique processing and packaging.** Meeting the needs of specific customer groups goes beyond simply choosing what to produce. Unique ways of processing and packaging may separate one farmer's produce from the rest, **tailoring the product** to meet the needs of a particular group of customers.

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- **Services.** Additional services – such as home delivery, convenient pick-up points or even farm visits for direct purchase (actually "inconvenient" but marketed as "authentic") – may distinguish one farmer's products from another.
- **Out-of-season production.** The provision of fresh, local produce before or after the normal growing season, or the use of innovative processing and storage methods to spread otherwise seasonal marketing may provide a **unique** advantage.
- **International markets (seed export).** Offering the highest possible quality seed to international clients creates a niche market situation, allowing the company to charge higher prices. While the promotion strategies may be similar to those adopted in domestic marketing (e.g. online marketing techniques, banners, billboards, pamphlets, print advertising, word-of-mouth and business cards), export marketing tends to be more challenging, since the company must appeal to different cultures, ideals and tastes. Policies, laws and regulations differ between countries, in particular, the phytosanitary and import permit requirements imposed on seeds. However, the harmonization of regional seed trade policies and regulations, and the harmonization of rules for international seed trade under the auspices of the International Seed Federation (ISF) are helping to facilitate seed trade across international borders. Seed companies with export aspirations should also take into account the International Plant Protection Convention (IPPC) – the only international standard-setting body for plant health. This multilateral agreement is designed to help prevent the spread of pests and diseases through international trade. The treaty is not a requirement for involvement in international seed trade, but it does help get countries on the same page in terms of phytosanitary requirements, i.e. the rules and requirements each country establishes regarding diseases and pests in order for a particular seed to enter its country. Overall, export marketing may entail a greater **risk and effort**, and may require **substantial financial resources**.

Getting help in niche marketing

While niche marketing offers many opportunities, there are **risks** involved when beginning any new business venture. To succeed, you must network effectively and seek advice or assistance to properly plan and establish your business. It is **useful** to:

- talk to and learn from companies already engaged in similar activities;
- obtain relevant information from various reference sources including the Internet and news media; and
- visit trade shows and fairs.

BRANDING AND PRODUCT POSITIONING

Branding and product positioning are **interrelated concepts** and **fundamental** for both small and large companies. Branding and positioning

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enable companies to influence how they are perceived by their desired market segments. A company must first:

- determine which market segments to serve;
- identify who already serves those market segments;
- distinguish how competitors differ;
- consider how it wishes to be perceived; and
- understand how they are currently perceived.

The company can then take the necessary steps to close the gap between desired and current perception.

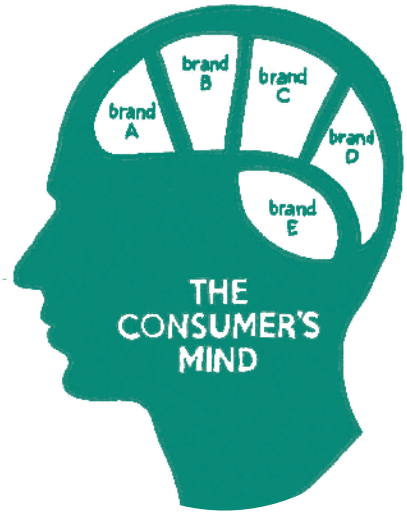

Figure 40. Brand experience embedded in the customer's mind

Branding

Branding is how a company wishes to be perceived by its customers in the marketplace. A company brand is intangible – the total **sensory experience** a customer has with the company and its product or service. It is embedded in the mind of every customer who comes into contact with a particular company, its staff and its product or service.

A company takes steps to replace consumer perceptions with a brand strategy based on product, price, distribution and promotional elements of the marketing mix. A good **branding strategy**:

- gets a company noticed in the marketplace;
- helps build a strong relationship with clients; and
- encourages repeat customers.

The creation of a good company brand requires a lot of research, covering aspects such as business goals, business identity and strategy, intended audience and brand identity. A **strong brand identity** or image is important to:

- retain customers;
- develop a range of products; and
- increase profit.

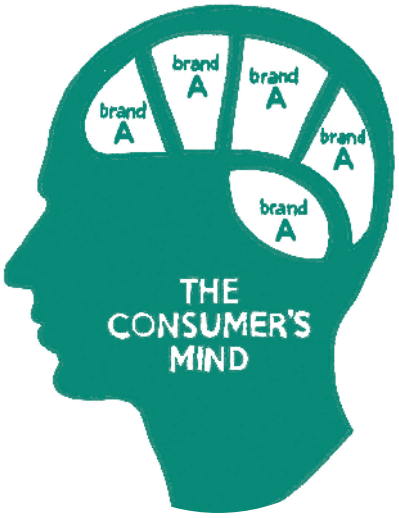

Figure 41. Brand positioning in the customer's mind

The **establishment of a strong brand** involves various steps, beginning with choosing a good **name**, which must be memorable and preferably illustrative of what the business does, and it must be accompanied by a logo. The **physical location** of the business must always be taken into consideration, in particular during the process of brand positioning. Finally, there is the aspiration of brand **leadership** – every business strives to be brand leader in their field. Some of these steps are examined in detail below.

Brand positioning is the process of creating a brand image to occupy a **distinctive place and value** in the target customer's mind, so that the customer buys a company's brand in preference to another. It describes

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how one company's brand is different from its competitors and where, or how, it sits in customers' minds. In order to create a unique and successful positioning for your brand, **you must analyse and understand**:

- what your consumers want;
- what your company's brand capabilities are; and
- how each competitor is positioning their brand.

To claim a brand position in the target market, it is necessary to convey a consistent image over time, reflected through actual performance in **all company activities** involving:

- product attributes;
- company service;
- employees; and
- promotional activities.

Brand leadership is an ambitious goal for small companies, but achievable in a niche market. Brand leaders set the pace, not only with regard to price but also in terms of innovation, product development, profits and calibre of staff. Bright people want to work for a brand leader. Brand leaders exhibit certain characteristics, including:

- a high level of staff training and commitment;
- excellent customer care policies; and
- a solid reputation.

Figure 42. A well-located seed company

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The brand establishment process involves the design of the **company logo**. People relate to the logo: it is the **face of the brand**. It is important to distinguish between logo (or slogan) and brand: the logo is not the brand itself, but it communicates the brand and helps brand the company. A logo is the **physical representation** of the company and may be a symbol, icon, emblem, letter mark or word. It is important, as it may be the first thing a customer sees. However, remember: a company's logo comes out of its brand (not vice versa). The brand (how the company wants to be perceived by its target audience) should be kept in mind when designing its logo. Creation of a logo is not about the colours or symbols you like; what matters is how you want your company to be portrayed to your intended audience.

Establishing a strong brand image identity can take several years, but a company has to start somewhere. As the company grows and its reputation is recognized, it can add more products or services to capitalize on its good name.

Product positioning

Both product positioning and brand positioning focus on acquiring a space in the mind of the customer. While brand positioning builds the company brand name, product positioning focuses on **managing and promoting the product portfolio**.

There may be many products under a single brand name, and each product requires different management. Throughout the process, the company should communicate a clear and consistent brand image to customers at all times. Given the many substitutes potentially available in the market, product positioning is important as it directly affects profitability and the long-term survival of the business.

Product positioning involves the **communication** of a product's attributes to its target customers, considering four main factors:

- **Customer needs.** A clear understanding of customer needs is important to be able to select the right communication channels and ensure that key messages resonate with customers. Identify which specific niche market segments you wish to target and pinpoint the customer needs, especially in terms of what products and services to offer.
- **Competitive pressures**. Based on a good understanding of customer needs, a company needs to convey to consumers why they should choose its product or service over that of competitors in the market. Take account of competitive pressures when considering product positioning elements in the marketing plan. Effective marketing plans clearly identify how the company's products or services are different from competitors' offerings and in what ways.

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- **Communication channels**. It is not sufficient to know how your product differs from those offered by your competitors; it is essential to communicate these attributes effectively to your target audience. Choose communication channels that connect well with the target audience at times when they are most receptive to these messages. For example, position seed products via radio/television commercials during major agricultural sporting events such as product fairs or conferences.
- **Key messages.** The final challenge is ensuring your message is carefully prepared, conveying the distinct aspects of your product or service – how your product is different (and better) than competitive offerings – and addresses the special attributes that are important to your audience.

Product positioning is at the heart of any effective marketing plan because it impacts the ultimate purchase decision.

PRODUCT DIVERSIFICATION

As discussed in Module 1, diversification involves moving your business in a different direction. Diversification entails **risk** – entering a **new market** with a **new product**. The business has no experience in the new market and therefore does not know if the product is going to be successful or not. There may be an initial lack of in-depth knowledge and experience, resulting in uncertainty. Nevertheless, diversification is essential in order to balance cash flow and increase contact with farmers.

Figure 43. Approaches to market segmentation

		Products	
		Present	New
Markets	Present	Market penetration	Product development
	New	Market development	**Diversification**

In seed marketing, the alternative to diversification is dependence on seeds of just one or two crops, and this too involves risk. Diversification into related products is an important move – it makes you less dependent on seeds and can provide **financial security**. Examples of diversification include:

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

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As agriculture is ever more commercialized and the seed industry increasingly competitive, farmer behaviour is changing. According to many seed company representatives, brand loyalty is declining with many commercial hybrids replaced after only 2–3 years. To remain competitive, seed companies must adopt aggressive marketing strategies – including product diversification – and many companies now market seed in combination with a growing package of complementary products and services or they routinely offer seed on credit.

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EXERCISES AND DISCUSSION POINTS

1. In a farming community, there are many maize seed companies but only one vegetable seed company. Are female farmers more likely to be offered discount prices for maize seed or vegetable seed? Why?
2. Discuss the view that it is not worth the huge investment required to develop new products, when it is just as easy to copy the market leader's products.
3. Is market segmentation always a good idea? Under what conditions might segmentation be unnecessary or unwise?
4. Explain with examples how a brand differs from a product. Select two brands you know and compare their positioning strategies.

④ Developing a seed marketing plan

Developing a seed marketing plan

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WHAT IS A MARKETING PLAN?

A marketing plan encompasses a range of aspects: understanding the target market, recognizing the company's competitive position, accessing the market (via marketing strategies) and differentiating the company from the competition in order to make a sale.

Marketing is fundamental in a successful seed business and the **marketing plan is an important component of the overall business plan**. Execution of the marketing strategy is based on the marketing plan. An effective and well-coordinated marketing strategy requires the right marketing mix, in which the four elements of the marketing mix (the 4Ps) support each other and function as one. Consequently, the marketing plan must successfully **incorporate the 4Ps**. The seed marketing plan should be an **active, living document** – as flexible as the seed market allows, but firm enough to accomplish the specified marketing objectives.

DEVELOPMENT OF A MARKETING PLAN

An effective seed marketing plan comprises the following **key elements**:

- Executive summary
- Situation analysis/market research
- Marketing objectives
- Marketing strategies and tactics
- Marketing methods
- Implementation of the marketing plan
- Marketing budget

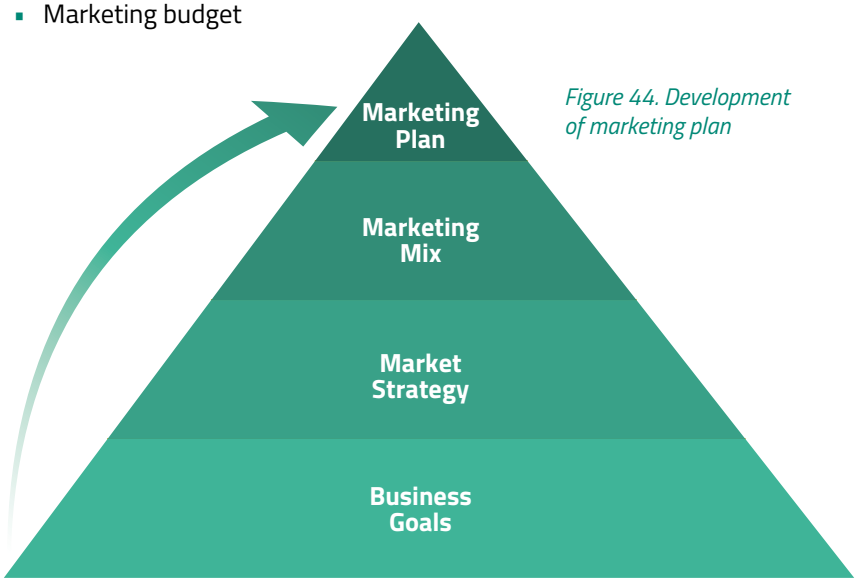

Figure 44. Development of marketing plan

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An example of a simple seed marketing plan is shown in Module 1 (Seed Enterprise Development) as a component of the overall seed business plan.

Executive summary

The marketing plan begins with an executive summary: a **concise and quick overview** of the main features of the plan. While the executive summary appears at the beginning of the plan, it is written last to ensure that the marketing plan is complete and coherent. The executive summary:

- introduces the main body of the plan;
- outlines what the business is about (business mission and key business objectives); and
- provides a reminder of the overall business strategy.

The business objective typically entails provision of high quality seeds of improved varieties, and the marketing strategy and plan must, therefore, target farmers who appreciate quality seed and promote the product to build the right brand image, attract farmers and encourage them to purchase seeds on a regular basis.

Market research and situation analysis

- **Market research** obtains and/or analyses quantitative and qualitative information about the target seed market (i.e. the market buying the kind of seed the business will sell) and the key factors influencing customers' buying decisions. (See Chapter 2 on market research and what to include in the marketing plan.)
- **Situation analysis** considers **external and internal factors** potentially influencing the marketing strategy of the seed business.

It is essential to gain an understanding of the **external environment** the business operates in, so that management can detect the threats and opportunities associated with the seed business. A **"STEEPLE"** analysis helps identify the main opportunities and threats in the seed market by examining different kinds of factors:

- Social – e.g. changing attitudes and lifestyles of farmers, migration of youth, and emergence of women's enterprises.
- **Technological** – e.g. introduction of new varieties (including hybrids or GMOs), and increasing use of the Internet and social media.
- **Economic** – e.g. taxation, interest rates, exchange rates and consumer confidence.
- **Environmental** – e.g. climate change and sustainable agricultural practices.
- **Political** – e.g. changes to business fees, and grants or start-up support for businesses or trading relationships.
- **Legal** – e.g. regulation of the seed sector through changes to seed policy, seed law or regulations.
- **Ethical** – e.g. moral standards governing policies and practices.

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It is also important to understand the seed business's own **internal strengths and weaknesses**. A **"SWOT"** analysis combines external and internal analysis to summarize the strengths, weaknesses, opportunities and threats faced:

- **Strengths** (internal) – what the business does best or positive business attributes within the control of management. What does the business do well? What advantages does the business have over its competitors?
- **Weaknesses** (internal) – areas that the business needs to improve or factors within the control of management that detract from its ability to obtain or maintain a competitive edge (e.g. lack of expertise, limited resources, poor provision of services, and inappropriate business location).
- **Opportunities** (external) – conditions in the industry or the community that the business may use to improve its position. Seek opportunities that play to the strengths of the business. Examine why the business exists and prospers and reflect on the potential of the business if it implements its marketing strategies effectively.
- **Threats** (external) – conditions in the industry or community that may undermine the success of the business operation. Decide how to deal with threats to the business and overcome important weaknesses. Other factors may be beyond the control of management, placing the business at risk and leading to deteriorating revenues or profits (e.g. fierce competition, price increases by suppliers, economic downturns, or shifts in consumer behaviour).

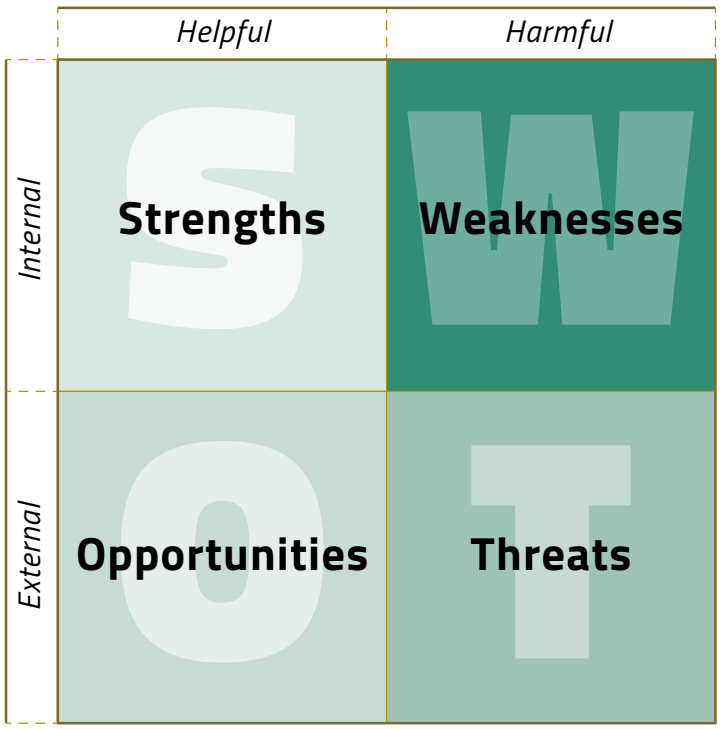

Figure 45. SWOT analysis tool

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Be realistic about the strengths and weaknesses of your business and keep the analysis short and simple. SWOT is a basic but useful and straightforward technique for assessing **business potential and possible opportunities and threats**. It is useful for:

- identifying promising customers;
- considering ways of using the Internet to reach customers; and
- investigating how to raise additional investment to overcome its financial weakness.

Marketing goals and objectives

Although the terms "goals" and "objectives" are often interchangeable, there is a distinct difference between them:

- **Goals** – statements that provide marketing direction and are in line with the company's overall direction. Goals should be specific for maximum effectiveness.
- **Objectives** – specific and measurable actions or methods to achieve the company's goals. Objectives are usually described in quantitative terms (e.g. sales dollars, units sold, market share).

For example, a company's goal is to double seed sales within the next 12 months. To achieve this goal, the company's marketing objective could be to make at least $1 000 worth of seed sales per week.

Your company's marketing **goals and objectives should be based on situation analysis**, i.e. a good understanding of the strengths and weaknesses of the company and its business environment. Link marketing objectives to the company's overall business strategy or goal.

"SMART" refers to the development of well-defined goals and measurable objectives:

- **Specific** – establish well-defined, actionable goals and quantifiable marketing objectives (i.e. objectives that can turn into numbers). For example, attract ≥ 30 new customers, sell 10 tonnes of maize seed per week, or increase income by 30% this year. Objectives can refer to sales, profits or customer satisfaction.
- **Measurable** – transform a goal into a measurable objective. You need to be able to check whether you have reached your objective when you review your plan: quantifiable objectives are easy to measure.
- **Achievable** – set goals that are within reach. You must have the necessary resources to achieve the objective. Key resources are usually people and money.
- **Relevant** – consider current market/economic conditions. Targets should stretch you – not demotivate you because they are unreasonable.
- **Time-bound** – set a time frame or deadline. For example, aim to get 20 new customers within the next 12 months.

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Marketing strategies

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Once the marketing goals and objectives are defined, develop a marketing strategy to realize the company's goals and achieve profitable success.

For example, your business goal is to increase seed sales by 10% over the coming year. Your marketing strategy could include targeting a promising new market segment to help achieve this growth:

- Gain a good understanding of the market.
- Break the market into different segments, i.e. groups of similar customers.
- For each segment: consider what seed or variety customers want, what your company can offer and what the competition is like.
- Identify segments where you have a competitive advantage.
- Assess whether you can expect sales high enough to make the segment worthwhile.

The most promising segments are often those where you have existing customers. Examine the potential for expanding sales to these customers. On the other hand, when targeting new customers, ensure you have the resources to reach them effectively.

Once you have determined your target market, you must decide how to **position yourself in the target market**, for example:

- selling high quality seed at a premium price;
- offering a flexible local seed delivery service; or
- building a strong brand and image to help your business stand out.

Choose a strategy and **differentiate yourself from your competitors** to encourage customers to choose your business first.
Marketing strategies are generally viewed in terms of the 4Ps: Product, Price, Place and Promotion.

- **Product.** What is the right product or product improvement? What does your product offer that your customers value? How should you change your product to meet customer needs?
- **Price.** What is your price? Is it in line with current economic conditions and/or competitors? Does it support your product positioning? Consider whether you wish to simply match the competition, or to charge a premium price for a quality product and service. Be prepared to choose between making relatively few high margin sales and selling more but with lower unit profits. Remember that some customers may seek a low price to meet their budgets, while others may view a low price as an indication of poor quality.
- **Place.** How and where will you sell? Are you targeting the right customer base in the right locations? Take into account different distribution channels, for example, selling over the Internet or through retailers.

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- **Promotion.** How do you reach your customers and potential customers? How can you gain more publicity or increase awareness? Consider using advertising, PR (public relations), direct mail and personal selling.

For a more comprehensive approach, you can extend this to the **"7Ps"**:

- **People.** Ensure that your employees have the right training.
- **Processes.** Offer a consistent service that suits your customers.
- **Physical evidence.** Be aware that the appearance of your employees and premises affects how customers view your business. Even the quality of paperwork, such as invoices, makes a difference.

Marketing methods

Many methods are available to sell the product:

- **Retail.** Stores or kiosks sell seed directly to farmers.
- **Wholesale.** A distributor sells to retail stores or directly to the farmer.
- **Direct/personal sales.** The company sells directly to customers using face-to-face interaction.
- **Direct marketing by print mail.** The company sells directly to customers using catalogues, brochures, leaflets and flyers.
- **Telemarketing.** Merchants sell directly to customers over the telephone.
- **Internet marketing.** Merchants sell directly to buyers at retail or wholesale prices via the Internet, the company Web site and social media (e.g. Twitter, Facebook and LinkedIn).
- **Sales force.** Salaried employees or independent commissioned representatives sell seed directly to the customer.

In addition, the marketing plan can incorporate a range of tools to raise awareness and **promote the product**:

- **Advertising.** Use print media, Internet advertising, radio and TV programmes, magazines, directories and sponsorships as promotional tools.
- **Networking.** Go where your market is: visit agricultural shows and trade fairs; participate at seed trade congresses; join seed industry organizations or associations; attend seed industry breakfasts/luncheons.
- **Writing articles and giving advice.** Earn a reputation as an expert.
- **Training programmes.** Organize or participate in training events to increase awareness.
- **Publicity/press releases.** Get information about your business to the public in real time. Such public relations tools are free and especially beneficial for a start-up or growing small seed business. A press release can be about a recent or forthcoming event, for example, a grand opening or a special event for a new product launch.

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Implementation of the marketing plan

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Activate a well-thought-out marketing plan to accomplish the specified business goals and objectives. Effective implementation of a marketing plan depends on two key requirements: **an action plan and a marketing budget**.

Action plan

The action plan sets out a schedule of **what** to do – the key marketing tasks or activities – and **when**. It assesses the resources needed to carry out these activities.

For example, for the **preparation of brochures** in a given season, consider the following:

- **What format** they should be in (hard copies, or in digital form for distribution by email or from the Web site) – depending on resources available.
- **How much time** is required to sell seed to customers using selected methods of sale.
- **How many salespeople** are needed.

Refer to the activity schedule as often as possible to keep sight of your objectives under the daily workload (see Figure 46).

Marketing budget

The marketing budget is a component of the marketing plan. It outlines the costs of achieving the marketing goals within a certain time frame.

The budget must account for the costs of **every aspect of the marketing plan.** If finances are limited, the plan must take this into account and not spread marketing activities too thinly; it is preferable to focus on a small number

Figure 46. Marketing schedule (sample template)

Activity	Budget	Q1			Q2			Q3			Q4		

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of key activities and capitalize on them. Calculate income and expenses, including research costs, to determine how much you can spend on marketing.

To set the overall marketing budget, small and medium-sized businesses often assign a certain percent over the previous year's budget or link the marketing budget to the total sales forecast. **Linking the marketing budget with sales/ revenue forecasting has advantages**:

- Calculate the volume or quantity of seeds you need to sell in a fiscal year in order to be profitable.
- Create marketing goals and strategies that enable you to reach your sales/ revenue forecasts.
- Define the budget for the marketing goals and strategies. Lack of sufficient funds to implement these strategies may be an indication that the revenue forecast is set too high or the marketing budget too low. The budget should be clearly defined, but flexible – for example, if a particular strategy is extremely successful, temporarily increase the budget. However, temporary success may be seasonal and may not warrant an extensive or long-term increase. On the other hand, if a particular strategy is not successful, consider documenting your findings for lessons learned. Refer to this information when updating the marketing plan and budget in the future.

Each marketing line item you plan to use should have a budget. Determine your marketing line items by answering certain questions:

- What previous marketing methods have been most effective?
- What marketing methods will you use to attract new customers?
- What methods are you using to test your marketing ideas?
- What methods are you using to measure the results of your marketing campaign?
- What percentage of profits can you allocate to your marketing campaign?
- What marketing tools (newspapers, magazines, the Internet, social media, direct mail, telemarketing, event sponsorships) can you implement within your budget?

EXERCISES AND DISCUSSION POINTS

1. What is the most important part of a marketing plan? Why? What is the least important part of the plan? Why?
2. Why does the implementation of a marketing plan not necessarily follow the same order as the plan itself?

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Table 2. Marketing budget (sample template)

Category	Q1		Q2		Q3		Q4		Year Total	% of Total
	Total	% of Total	Total	% of Total	Total	% of Total	Total	% of Total		
ANTICIPATED SEED SALES ($)										
PERSONNEL										
- Management staff										
- Sales staff										
- Others										
DIRECT MARKETING										
- Personal										
- Retail										
- Wholesale										
- Task force (commissioned)										
INTERNET MARKETING										
- Web site										
- Social media										
ADVERTISING										
- Online										
- Radio										
- TV										
- Newspaper										
PUBLIC RELATIONS										
- Press releases										
- Conferences										
- Webinars										
- Public events										
NETWORKING										
- Trade shows and fairs										
- Seed associations										
TOTAL		100%		100%		100%		100%		100%

5 Managing seed marketing risk

Managing seed marketing risk

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Market discipline requires goals to be established and included in the marketing plan, which guides the enterprise in accomplishing its business goals. Nevertheless, it is difficult in practice to follow through with the marketing plan because of the **uncertainty and volatility associated with product and input markets**. It is, therefore, essential to:

- understand the different dimensions of marketing risk;
- identify possible mitigation measures; and
- know which tools are available to take advantage of opportunities.

WHAT IS RISK (AND HOW DOES IT DIFFER FROM UNCERTAINTY)?

Risk is the **chance of loss or failure associated with an action**. Uncertainty refers to the state of not knowing what the exact outcome will be in the future; risk, on the other hand, is the part of uncertainty that **can be measured** or estimated and can, therefore, be included in the planning process. The greater the uncertainty, the greater the risk.
For example, the occurrence of drought is an uncertain event, but an estimated fall in earnings due to 30% yield loss from drought is a risk.

Risk premium

Risk makes it possible to make a profit. Without risk, there is no return on the ability to successfully manage it. Every decision involves a risk–return trade-off: where there is possibility of loss (risk), there is opportunity for profit. Growers must decide between different alternatives with various levels of risk. Alternatives posing minimum risk may generate little profit. Alternatives with high risk may generate the greatest possible return, but the risk entailed may be more than the producer wishes to bear. The optimal choice achieves a **balance between the potential for profit and the risk of loss**. Management must try to achieve this balance, but there is no sure method.

Economists call this principle "risk premium". In the context of farming, prices are highest when risk is greatest. As the **risk decreases, prices drop**. While seemingly simple, moulding the concept into a marketing strategy is not straightforward.

As the season progresses, the risk decreases through to harvest, after which there is no longer any risk. Consequently, there is no longer any risk premium. The major factor then becomes demand – unless there has been a short crop caused by one of the risk factors, in which case, supply becomes a factor as well.

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Risks associated with farming and seed production

Farming is a risky business, and, given that it is a part of farming, seed production is risky. Farmers make risky decisions each day as they go about their daily operations in a state of uncertainty with:

- varying weather conditions,
- shifting price patterns;
- changing government policies and regulations; and
- fluctuating markets for inputs including labour.

Due to the risks involved, the consequences of farmers' decisions transpire much later and the outcome may be better or worse than expected.
Seed production comprises a diverse range of activities, including field multiplication, quality assurance, purchasing, processing, storage, distribution and marketing. Each seed activity is associated with different kinds of risks and requires specific management strategies to mitigate these risks.

The risks affecting seed businesses fall into **two broad categories**:

- **Financial risks** – including high financial leverage (high debt to equity ratio), changes in interest and exchange rates, damage to assets, variation in credit and loan terms, and conditions of rapid inflation.
- **Physical risks** – including environmental risks (e.g. climate, weather, pests and diseases), human risks (e.g. behaviour of competitors, partners and clients), variations in input and output markets including prices, failure of new technology and lack of information.

What are seed marketing risks?

Marketing risk is any market-related action or event resulting in **price variability**, whether related to what farmers receive for their products or what they pay for production inputs. Marketing risks include the forces of nature (weather), government action and access to markets. When farmers decide to produce a commodity, they take a marketing risk because of the future uncertainty and variability of market prices.

ESTIMATING RISKS

Risks are usually estimated using **probability** – the expression of the chance of various outcomes occurring. Risky variables have a probability distribution, which defines the chances of success (gain) or failure (loss). A marketing variable, such as price, is associated with a degree of uncertainty, and hence has a probability distribution.

At the start of a growing season, farmers may have a reasonable idea of forthcoming possibilities based on prevailing conditions or historical trends. Never-

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theless, they face a risky prospect with regard to the price of their product, because they cannot know the exact selling price. Moreover, there could also be variations in the sales price of inputs: an additional risk.

Dealing with a large number of variables subject to chance is highly complex, and the sophisticated computing methods used in risk analysis may be beyond the scope of small businesses. It is sufficient in many cases to **identify the kinds of risks** a business may face in order to help **guide management decisions**.

Normal probability distribution

Marketing decisions relate mostly to price. With regard to product price, there is a distribution of individual price values about a mean (x) expressed in, say, $/tonne. Consequently, although there is an expected price value (mean value), the actual price obtained by the farmer fluctuates from year to year around this expected value. The deviation from the mean is the standard deviation(s), interpreted as risk. The smaller the standard deviation compared to the mean, the closer the individual values around the mean, and the more representative the mean for the values in the data.

For a given probability distribution of price, an individual value (x_j) is compared with the mean (x) and standard deviation(s) of the distribution, such that $(x_j - x)/s$ gives the number of standard deviations away from the mean for the value x_j.

Statistically, if the probability distribution of price is normal, then 68.3% of the price values fall within ±1 standard deviation on either side of the mean price, and 95.4% with ±2 standard deviations. The range of possible price values is measured on the horizontal axis and the probability of price values is measured on the vertical axis. The area under the plot equals 1, which indicates that the total probability is 100% for all possible price values.

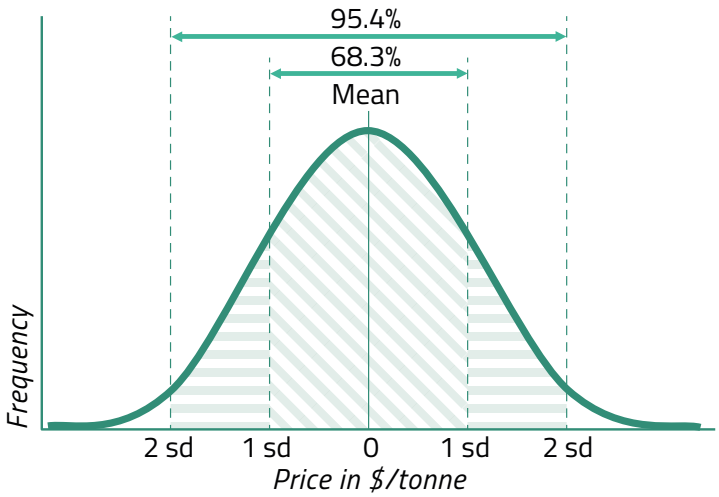

Figure 47. Normal distribution of seed price

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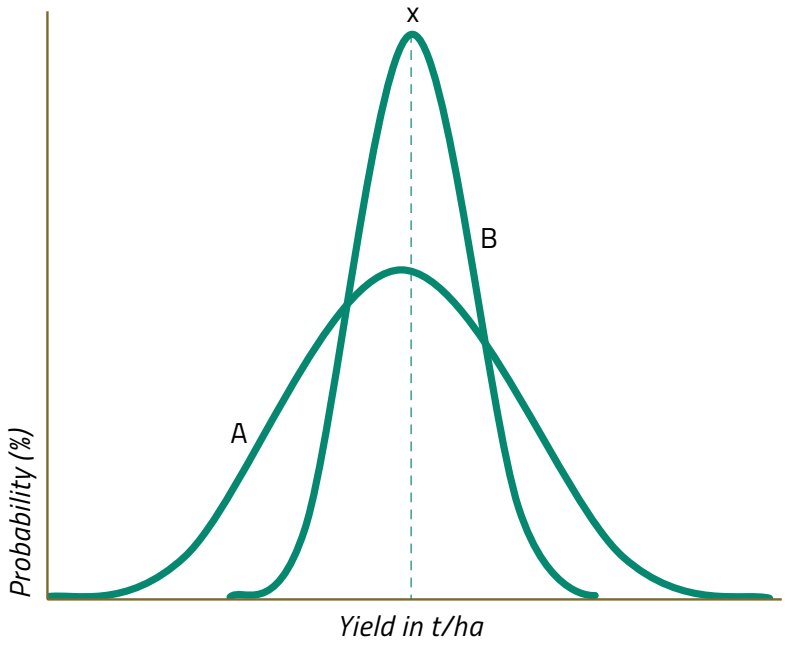
Skewed probability distribution

In many practical situations, probability distributions are not normal, but are skewed; different statistical methods are used to measure the dispersion of values about the mean. In general, the greater the dispersion of values around the mean, the riskier the outcome.

Example 1: Probability distribution of yield with same mean and different standard deviation

Two enterprises, A and B, grow a crop variety with the same genetic potential. Enterprise A grows the crop under rainfed conditions and B under irrigation. Enterprise A is more risky, since the degree of dispersion of yield around the mean is higher: there is a probability of low yields (although high yields are also possible). Enterprise B is more efficient and is associated with less risk, since there is a smaller dispersion of yield around the mean and less likelihood of low yields.

Figure 48. Probability distribution of yield with same mean and different standard deviation



Example 2: Probability distribution of yield with different means and same standard deviation

The mean yield (x_2) of B is greater than the mean yield (x_1) of A. The standard deviation is the same with similar distribution about different mean yields. The number of individual yields (frequency) is the same in both cases.

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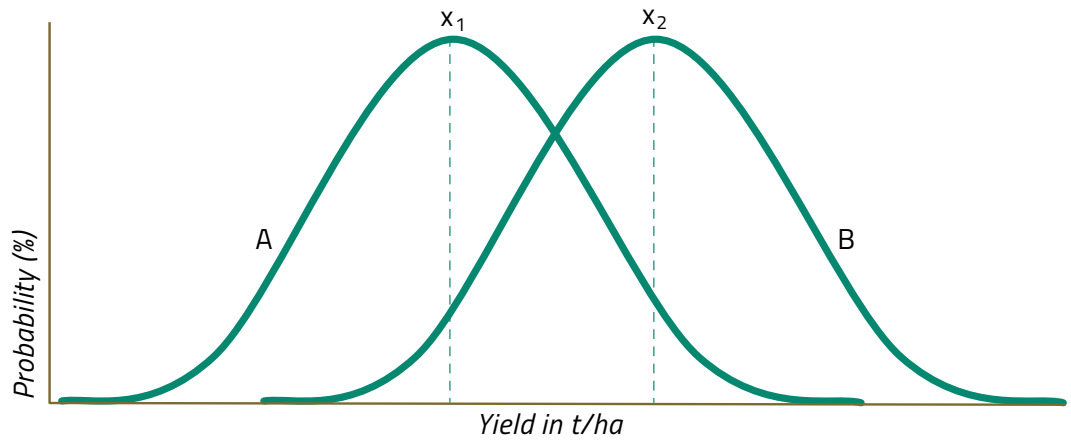
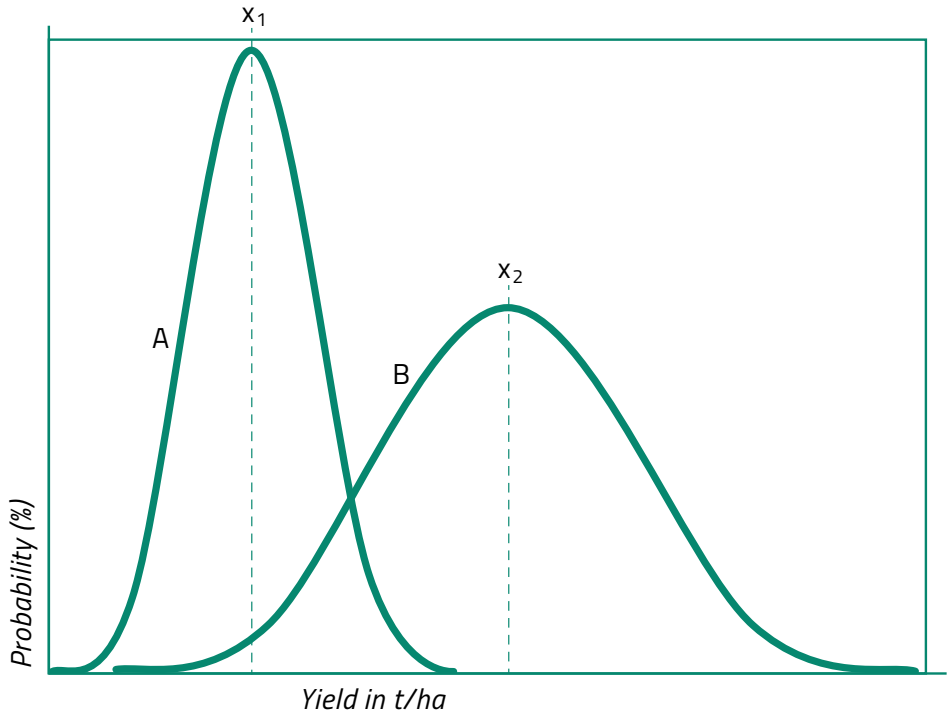
Figure 49. Probability distribution of yield with different means and same standard deviation



Example 3: Probability distribution of yield with different means and different standard deviation

Both the mean yield and standard deviation of B are larger than those of A. The frequency of B is larger.

Figure 50. Probability distribution of yield with different means and different standard deviation



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Attitude of small businesses towards risk

Small businesses are **generally risk averse** – when there are alternatives offering seemingly the same expected return, they tend to prefer the option associated with less risk.

For example, if a local variety of rice has 80% probability of achieving a yield potential of 500 kg/ha, the expected yield is 500 × 0.8 = 400 kg/ha. Similarly, if an improved rice variety has 20% probability of giving a yield potential of 2 000 kg/ha, the expected yield is 2 000 × 0.2 = 400 kg/ha. Although the local variety has less yield potential, the probability of complete failure with zero yield is less (20%) than with the improved variety (80%).
Farmer attitude to risk varies:

- A **risk-neutral** farmer is indifferent (albeit an unlikely scenario) and desires either variety with equal measure (because they have the same expected yield of 400 kg/ha).
- A **risk-averse farmer** chooses the local variety with less risk of failure, and considers the two varieties equivalent only if the improved variety has a yield potential > 2 000 kg/ha.
- A **risk taker** prefers the improved variety for its higher yield potential.

Attitude to risk influences the adoption of new technologies, especially by small farmers or businesses operating in difficult environments. Farmers form different perceptions about the risk involved in new options and they carefully weigh the possible effects on their operations before making a decision.

Investors want to maximize the investment returns for a given level of risk, and risk aversion relates to the notion that investors generally wish to avoid risk. Given a choice between two investments with equal returns, a risk-averse investor selects the investment with lower risk and demands a risk premium for taking on additional levels of risk. The more risk averse the investor, the higher the premium he/she demands before taking on risk. Investors who do not demand a premium for risk are risk neutral and those that enjoy risk are risk seekers or risk takers.

Qualitative risk assessment

Identification of the kinds of risks a business faces serves as a simple guide in decision-making. A qualitative risk assessment is a **subjective evaluation of risk factors**, prioritizing them based on probability and impact. The rating and impact scales adopted depend on the nature of the business and its objectives.

Qualitative risk assessment can take place during the appraisal stage of a project to be included in the risk/assumption column of the logical framework (logframe) as applicable. It is then possible to develop a risk mitigation table (see Table 3).

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Table 3. Qualitative assessment and mitigation of risk

	Risk/Assumption	Likelihood of occurrence	Mitigation measures
1	Insufficient number of farmers in the community want to invest in quality seed for crop production because of difficult logistical and security circumstances.	Medium	Make safe delivery arrangements for farmers purchasing seed in bulk.
2	Government is not committed to rebuilding of main bridges and maintenance of market feeder roads.	High	Work closely with government to facilitate formulation and implementation of appropriate policies and laws.
3	Transporters are unwilling to go to more remote areas because of unreliable information on stock levels.	Medium	Collect reliable seed stock information and make it available to reputable transporters.
4	Limited political will exists to minimize the practice of impromptu taxation of farmers.	Low	Participate actively in relevant taxation committee meetings.
5	Risk prevails of return of tribal conflict and instability.	Medium	Work closely with local peace and reconciliation committee.
6	Farmers do not apply the marketing techniques they learn.	Low	Work together with farmers following training to ensure adoption.

Quantitative risk assessment - sensitivity analysis

There are several quantitative methodologies available based on the assessment of impact and the probability of risk factors. One of them is sensitivity analysis.

Sensitivity analysis **tests the sensitivity** of results to changes in key variables. For example, in seed marketing, it is essential to assess how the quantity demanded of an enterprise's seed is affected by changes in the key variable (price) in the sensitivity analysis.

Sensitivity analysis is essentially a **"what if" technique** that attempts to answer questions such as: What will be the net income of an enterprise if, for some reason, there is a change in the predicted sale price of seed?

Most farmers in seed markets are sensitive to the sale price of quality seed, and it is assumed that more farmers buy seed if it is cheaper and fewer if it is more expensive. In fact, the price elasticity of demand can show exactly how responsive farmer demand is depending on price. It is important for enterprises to understand how **elastic** (sensitive to fluctuations in price) or **inelastic** (largely indifferent to price changes) their seed is when contemplating how to set or change its price.

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Calculating price sensitivity or elasticity

The formula for calculating the price elasticity of demand for seed is (see Chapter 1):

$$\epsilon d = \frac{\%\Delta QD}{\%\Delta P} = \frac{\text{Percentage change in quantity of seed demanded}}{\text{Percentage change in price of seed}}$$

For example: A seed company raises the price of its maize seed from $100/tonne to $120/tonne. The price increase is ($120–$100)/$100 or 20%. Suppose the increase causes a decrease in the quantity sold from 1 000 tonnes to 900 tonnes. The percentage decrease in demand is –10%. Price elasticity of demand is calculated as follows:

$$\frac{-0.10}{0.20} = -0.5 \text{ or } 0.5$$

Conventionally, the negative is ignored and the absolute value is used to interpret the price elasticity. The higher the absolute value of elasticity, the more sensitive farmers are to price changes.

Using price elasticity to create unique products

Innovative and successful marketing enterprises aim to provide customers with unique products of sustainable value. Price elasticity measures an enterprise's success in developing unique products that are differentiated and meaningful to customers. The goal is to move products **from relative elasticity to relative inelasticity** by:

- increasing consumers' desire for the product (and willingness to pay regardless of price) through branding and other marketing initiatives; and
- improving the company's standing compared with its competitors.

Price elasticity is not an end in itself. It is one factor of how successfully companies market unique products and it is affected by other factors, including:

- type of product;
- income of target consumers;
- health of the economy; and
- competitors.

It is important, therefore, to consider price elasticity, not in isolation, but in the context of the industry and its competitive structure, and of consumers' lives. A product can become more elastic if competitors offer compelling substitutes or if consumers become more price sensitive due to decreasing income.

Reasons for caution in using price elasticity

- **Inexact calculation.** Calculation of price elasticity is based on estimated change in demand resulting from price changes. Carry out questionnaire surveys, focus groups or small-scale experiments to gauge what might happen if companies

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change their price. Survey responses provide an idea of customers' intentions. However, what respondents say they will do is not always what they actually do when faced with a real purchasing choice. An in-market test may be more accurate: place the product at the new price point, assess the demand and compare it to the same product at a different price.

- **A dynamic (not static) concept.** The price consumers have historically paid is not necessarily what they are willing to pay now or in the future. It is impossible to know how customers will behave in the marketplace and at each price point. The measure of price elasticity can be imprecise and its application is difficult to predict. Moreover, understanding the price elasticity of demand is not sufficient to be able to manage it. First, understand the current price elasticity and the factors making it elastic or inelastic; then, consider how those factors change over time. The goal is to remain relevant to consumers but differentiated from competitors. It is then possible to adjust the price (up or down) to represent the level of value provided to customers. Current price elasticity is just one data point that helps make those future decisions.
- **Consumer behaviour.** Numerical measure alone is not sufficient to understand consumer behaviour. Run market tests to understand why consumers act the way they do. Understanding the reasons behind consumer behaviour is essential for predicting consumer response in the future, and the information will inform your marketing efforts. Supplement quantitative testing with qualitative research.
- **Difference between price elasticity and price sensitivity.** Price sensitivity is qualitative –products are either sensitive or not sensitive to price. Price elasticity, on the other hand, is quantitative. While closely related, it is important to understand that the two concepts are not the same.

MARKETING RISK MANAGEMENT AND MITIGATION STRATEGIES

Risks come in the form of external opportunities and threats (see SWOT analysis in Chapter 4). Risk assessment is based on the likelihood or probability of occurrence and the possible impact on the business in terms of cost, financial performance, quality etc.
Risk management and mitigation, on the other hand, is the process of **identifying, assessing and mitigating the risks** businesses face. Risk management involves formulating actions to counter business and financial risks in an enterprise. The management strategy adopted depends on the unique circumstances of the business. For example, the managerial responses to risk applied in a large commercial enterprise may not be appropriate in a small business.

Integrated risk management approach

The marketing plan is one component in the overall business plan. For this reason, it is necessary to adopt an integrated risk management approach to coordinate the marketing risk management plan with the production, opera-

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tion, financial, legal and human risk management plans for the business. For example, marketing plans are directly linked to the financial needs and plans of the business, and marketing decisions may involve contractual arrangements with legal implications.

Price risk management tools

Seed marketing risk exists because of the variability or uncertainty of future market prices (of inputs, outputs, supplies etc.) faced by the business when making the decision to produce seeds. Risk management involves ways of coping with key price-related effects, such as changes in seed prices or changes in the behaviour of clients, competitors or market intermediaries. Price risk management tools can reduce price variability or set a satisfactory price before the seed is ready for sale. Selecting the right tool to use at the right time can both mitigate risk and increase profit; some of the tools available are described below.

Direct sales

For small-scale enterprises, selling seed directly to farmers has advantages:

- Dealings with intermediaries and traders are reduced.
- Profitability is enhanced.
- Risk of delayed payment is lower.
- Cash transactions are simple.

However, direct sales require certain conditions:

- Seed prices are favourable.
- Prices were anticipated in the marketing plan.
- Profitability is greater than when selling to traders.
- Higher retail prices obtained cover the extra costs incurred.

Forward pricing contracts

In a forward pricing contract, the enterprise reaches an agreement with the buyers (private individuals, companies or agencies) on a price for the sale of seed before delivery establishing in advance the price, quantity, quality and time. There are advantages:

- Price uncertainty is reduced.
- Enterprises reduce the risk of not covering production costs.

A successful agreement is based on a condition of trust, as there are risks that the enterprise does not deliver the seed as specified in the contract, or that the buyer does not pay the agreed price.

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Forward production contracts

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Contract growers usually face considerable risk associated with the final selling price of the raw seed they produce. If growers wish to take advantage of competitive price offers from different contracting seed enterprises, the market prices are critical. In a forward contract with a seed enterprise, the **grower has advantages**:

- A market is guaranteed.
- Higher or stable prices are established.
- A relatively reliable cash flow is ensured.

However, contract production with agreed pricing also entails disadvantages:

- Flexibility may be reduced.
- There is less opportunity for growers to capture higher price potential.

Overall, contract production is **beneficial to seed enterprises** as it provides a reliable source of raw seed supply and reduces the risk of buying poor quality products.

Storage of carryover stock

Safe storage allows the grower to **avoid seasonally low seed prices** when there is a realistic expectation of future increase in market price. Successful storage requires certain conditions:

- Prices are below the level anticipated in the marketing plan.
- Future market prices will cover storage costs.

Diversification of income sources

Enterprise diversification involves holding a combination of investments. It is a risk-reducing strategy and a potential component in a business plan. The rationale for diversification is that **an investor risks less with a combination of investments than with a single investment**. Diversification ensures a possible reduction in the total variability of returns by combining different income-generating activities without unduly sacrificing expected returns.
Minimizing risks through diversification depends on the correlation (covariance) among investments: higher-risk investments generally carry higher expected returns, and vice versa. There should be a trade-off between the extent of risks and the magnitude of expected returns. This trade-off forms the basis of risk management strategies. Activities whose returns are not perfectly correlated should be incorporated into an investment portfolio – enterprises should include activities with negative covariance (i.e. a high profit potential of one activity is associated with a low profit potential of the other).
For seed enterprises, diversification can entail **various combinations**:

- self-managed production on seed farms and seed production using contract growers;
- seed production and grain trading;

  cereal seed production and vegetable seed production; or

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- seed production and other related activities (e.g. grain milling, and sale of agrochemicals and tools).

The overall **aim** of diversification is to smooth the flow of income to an enterprise by allowing different activities to generate returns during different periods within the farming year; the possibility of loss is thus reduced.
The main **advantages** are:

- Reasonable cash flow is ensured.
- Risk avoidance is achieved.

Seed price information

For effective price risk management, seed price information must be available, especially to seed buyers. A sound knowledge of market prices has advantages:

- Farmers are better able to forecast future income.
- Farmers can make informed decisions about farm operations (e.g. level of inputs required and amount of seed to produce).

Membership of seed marketing cooperatives

Seed marketing cooperatives provide the opportunity to benefit from volume sales or purchases and present **advantages**:

- Individual members receive enhanced prices.
- Costs of transactions are reduced.

EXERCISES AND DISCUSSION POINTS

1. Three investors, A, B and C are considering investments in two seed companies: 1 and 2. Investment in Seed Company 1 is the least risky of the two, requiring an investment of $100 000 with an expected rate of return of 10%. Investment in Seed Company 2 also requires an investment of $100 000 and has an expected return of 10%, but appears to have considerably more variability in potential returns than Seed Company 1. Investor A requires a return of 14%, B requires 10%, and C seeks only an 8% return. Based on this information, explain which of the three investors is considered risk averse?
2. What can a seed company do to decrease customers' price sensitivity? Would all of the company's customers be likely to react in the same way?
3. Would a seed company ever want to do anything to increase its customers' price sensitivity? Why? What steps might it take?

Glossary

Aggregate demand
Also known as market demand, represents the total amount of product all customers are willing to buy over a range of prices in a given time period.

Average revenue
The total sales revenue earned by a business divided by the total units sold. A competitive enterprise's marginal revenue always equals its average revenue and price.

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.

Brand
The total sensory experience a customer has with a company and its product or service. The brand of a company is intangible; it is how a company wishes to be perceived by its customers in the marketplace.

Brand loyalty
Customers' attachment to a certain brand out of habit, which may override sensitivity to minor price changes.

Brand positioning
The process of creating a brand image so that it occupies a distinctive place and value in the target customer's mind, making the customer buy a company's brand in preference to others.

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

Conjoint analysis
A survey-based statistical technique used in market research that helps businesses measure the value their consumers place on the different attributes that make up an individual product or service.

Complements
Goods that "go together" such that a change in the price of one good induces customers to demand more or less of both goods.

Cost plus pricing
A method of pricing that takes into account the total cost plus a reasonable profit margin to determine the selling price.

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

Demand schedule
A table showing how much of a given good customers would be willing to buy at different prices.

Disposable income
Income that customers have available for spending or saving after all taxes have been deducted.

Elastic demand
When the price of a good (or other factors) has a big effect on the quantity consumers want to buy.

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.

Field trial
A method of market research in which a product is tested by users in a "real life" setting.

Focus group
A moderated group interview and brainstorming session, ideally involving a group of key informants coming together to discuss a topic among themselves in an open manner.

Four Ps
Four controllable parameters namely Product, Price, Place and Promotion in the marketing mix. This combination of factors can be controlled by a company to attract consumers to its brand and influence them to purchase its products.

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 referred to as improved seed.

Inelastic demand
When the price of a good (or other factors) has little effect on the quantity consumers want to buy.

Inferior good
A good for which demand falls when income rises.

In-person survey
A one-on-one interview in which an interviewer obtains immediate feedback from a respondent.

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

Key informant
A knowledgeable or influential person in an organization or community who is well informed about a particular research.

Law of demand
Law stating that there is a negative, or inverse, relationship between the quantity of a good demanded and its price, which means that demand curves slope downwards.

Law of supply
Law stating that there is a positive relationship between price and quantity of a good supplied in the market, which means that supply curves typically have a positive slope.

Logical framework (logframe)
A project-planning matrix that presents information about the key components of a project in a clear, concise, logical and systematic manner, by setting project objectives, defining measurable indicators of success and outlining critical risks/assumptions on which the project is based. The logframe may also include additional information on the resources required to implement a project.

Mail survey
Widely adopted quantitative market research data collection method in which respondents complete questionnaires on paper and return them via postal mail.

Marginal cost
The increase or decrease (incremental change) in the cost of producing one more unit or serving one more customer.

Marginal revenue
The change in total revenue for selling one more unit of the product.

Market equilibrium
The condition that exists when the quantity of good supplied and quantity demanded are equal. At equilibrium, there is no tendency for the market price to change.

Marketing
The process by which products and services are valued and exchanged.

Marketing mix
A combination of factors that can be controlled by a company to attract consumers to its brand and influence them to purchase its products. This marketing mix is also called the 4Ps and comprises four controllable parameters, namely Product, Price, Place and Promotion.

Marketing plan
A component of the business plan including everything from understanding the target market and competitive position in that market, to how to reach that market (strategies) and differentiate the company from the competition in order to make a sale.

Market demand
Also known as aggregate demand, represents the total amount of product all customers are willing to buy over a range of prices in a given time period.

Market equilibrium
Condition that exists when the quantity of good supplied and quantity demanded are equal. At equilibrium, there is no tendency for the market price to change.

Market research
The process of gathering information about your prospective or existing market, the kinds of customers in the market and the nature of competition.

Market segmentation
The process of subdividing the mass market into distinctive subsets or segments of relevant customers that behave in more or less the same way or have similar needs.

Mass market
A usually large, undifferentiated market of consumers with widely varied backgrounds.

Monopoly
A situation in which one business entity exercises exclusive dominance or control of a commodity or service in a particular market usually through the manipulation of prices.

Niche market
A relatively small group of customers comprising a specific market segment, unique in terms of preferences and customer needs.
Normal distribution
A common naturally occurring continuous probability distribution characterized by the mean of 0 and a standard deviation of 1. The distribution is bell-shaped and sometimes called the bell curve. It is symmetrical, with half the data falling to the left of the mean and half falling to the right. The total area under the curve is 1 with 68% of the data falling within one standard deviation of the mean, 95% within two standard deviations of the mean, and 99.7% within three standard deviations of the mean.

Normal good
A good for which customer demand goes up when income increases and down when income falls.

Online survey
A survey questionnaire that the target audience can complete over the Internet.

Organic crop
A crop produced using farming methods that involve the use of natural sources of nutrients and crop control, but no synthetic or inorganic agrochemicals such as pesticides and fertilizers.

Perfect elasticity
A market situation in which any very small change in price of a good results in a very large change in the quantity demanded of the good.

Pitch
When an entrepreneur (or group of entrepreneurs) presents or describes their ideas to prospective investors. A short summary used to quickly and simply define your business plan and its promise of value to be delivered.

Price
The amount of money required in payment for a good offered for sale.

Price discrimination
A pricing strategy used by companies to charge different groups or segments of customers a different price for the same product or service.

Pricing research
The process of identifying the product features most valuable to the customers and their willingness to pay by asking them to choose between different products with unique features and price points.

Price elasticity of demand
A measure of the responsiveness of the quantity demanded of a product or service to a change in its price, all other conditions remaining the same.

Primary market research
Research undertaken to gather data for own use by obtaining information not otherwise available about customers' attitudes, preferences, buying habits, tastes and behaviour.

Product diversification
The process of delivering a new product in a new market. This method carries the greatest risk because the business enters a new market in which it does not currently operate. The business has no experience in the new market and therefore does not know if the product is going to be successful or not.

Product positioning
A marketing technique used by companies to present or communicate their products' attributes in the best possible light to target customers based on their needs, competitive pressures, communication channels and clearly defined key messages.

Profit
Surplus remaining in a 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 statement
A record of an enterprise's financial transactions and the resulting 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.

Promotion
A marketing effort in publicizing a product to increase public awareness and potentially lead to increased sales.

Qualitative market data
Data that are mainly the outcome of opinions and feelings of customers as far as a business's products or services are concerned.

Quantitative market data
Numerical data that can be statistically analysed and generally obtained using market surveys with structured questionnaires.

Risk
The possibility of loss or failure associated with an action; the part of uncertainty that can be measured or estimated.

Risk averse
When the option associated with least risk is preferred despite the existence of alternatives that generate seemingly the same expected return.

Risk premium
The return investors demand for taking on additional levels of risk.

Sample survey
A process for collecting data from a representative sample of observations drawn from a population of interest.

Secondary market research
The search for existing information, such as demographic data and industrial statistics that have already been collected and possibly analysed.

Seed replacement rate
The number of generations that seed from the previous crop can be used.

Sensitivity analysis
A "what if" technique for testing the sensitivity of results to changes in key variables.

SMART objectives
Clearly defined and measurable objectives that are specific (S), measurable (M), achievable (A), relevant (R) and time-bound (T).

Standard deviation
A measure of the spread of the normal probability distribution, seen as differing widths of the bell curve. A smaller standard deviation means that the data are tightly clustered around the mean; the normal distribution will be taller. A larger standard deviation means that the data are spread around the mean; the normal distribution will be flatter and wider.

STEEPLE analysis
A method for analysing external factors existing in a market, namely social (S), technological (T), economic (E), environmental (E), political (P), legal (L) and ethical (E).

Substitutes
Identical goods that can serve as replacements for each other.

Supply
The total amount of a specific good or service that is available for sale to customers.

Supply schedule
A table showing the quantity of a given good that an enterprise will supply at different prices.

SWOT analysis
A method for analysing the internal strengths (S) and weaknesses (W) of a business, as well as the external opportunities (O) and threats (T) it faces.

Telemarketing
A process by which merchants sell directly to retail customers via telephone.

Target market
The market that will give a business the best returns on an investment.

Uncertainty
The state of not knowing what the exact outcome will be in the future

Unit elasticity
A situation where a change in price of a given good is matched by an equal change in quantity demanded of the good such that the value of elasticity is equal to 1.

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 Seed 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.

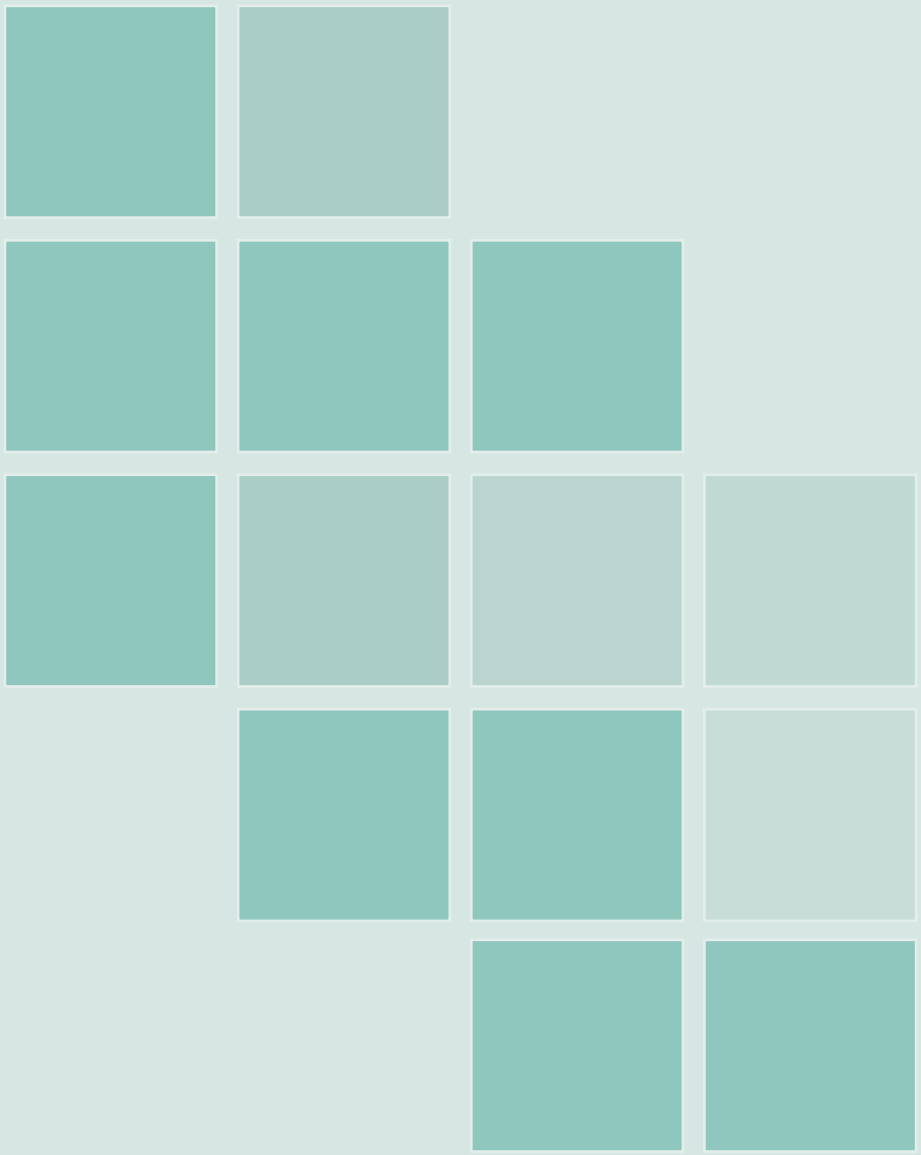
3. Seed Quality Control. This assists seed practitioners and other stakeholders in meeting the set quality standards for seeds and in implementing procedures for certification. The topics covered include field inspections and seed conditioning, packaging and tagging, storage, sampling/testing, and distribution.

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 presents the underlying principles for valuing and exchanging seeds. This module describes all the activities which are undertaken in getting seeds from the producers to the end-users or farmers. The reader is provided 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.



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