AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

Economics is the study of how man utilises the scarce productive resources to produce goods and services, over time, and distribute them among various consumers in society.

Agricultural economics is a branch of economics is the art and science of how man uses the scarce resources to produce goods and services for maximum profits and minimum costs.

PRINCIPLES OF AGRICULTURAL ECONOMICS

A) Scarcity: Economic scarcity means resources are limited in supply relative to demand. This principle implies that there is no time that man can have enough resources to satisfy all his needs or desires.

Causes of scarcity in agricultural production.

- Natural factors like drought
- High costs of production
- Poor production methods
- Inadequate factors of production e.g. land and capital etc
- Smuggling and hoarding of agricultural products
- Long gestation period of crops like coffee
- Poor planning by the farmers

B) Choice or preference: Human wants are unlimited and therefore not easy to satisfy them. Hence man has to make a choice among the alternatives in order to use the resources available. Man does this by satisfying the most pressing needs first. This is called **scale of preference**.

C) Opportunity cost: This refers to the value of the foregone alternative. In choosing among the available alternative resources, a farmer forgoes the value of an alternative to his choice. Normally, the farmer chooses the alternative that brings maximum value or

satisfaction to him. Where there is unlimited supply of resources, there is no opportunity cost, e g. Oxygen which is free and in unlimited supply but is essential for life.

PRODUCTION ECONOMICS

Production is the process by which goods and services are transformed into other goods and services called outputs in order to satisfy human needs. I.e. it is an input−output relationship. It is the creation of **utility** of goods and services.

Utility. Refers to the ability of goods and services to satisfy human wants. There are 3 types of utility:

- **Form utility.** A good or service must be in a form satisfies the consumers for example maize flour processed from maize grains to be used as posho.
- **Place utility.** A good or service must be in the right place to satisfy human wants.
- **Time utility.** A good or service should be available at the time of need or when it is required.

FACTORS OF PRODUCTION

Factors of production are the resources or inputs needed in the production process of certain goods or services. This include: land, labour, capital and entrepreneurship or management.

A) Land: Land refers to the soil, water, minerals resources, air, light and heat that are found in a place. Land is a fixed factor of production where plants and animals are managed. The reward for use of land is **Rent.**

Uses of land

- It is used to produce food, flowers fibres and timber.
- For construction of buildings, factories, trading centres and roads.
- Provides man with energy e.g. coal and petroleum
- Source of revenue to the government through taxation.
- It is used for wildlife conservation with is a source of foreign exchange.

- Holds water to support fish production
- Can be used as a mortgage to get loans

B) **Labour**: It refers to man's effort directed towards the process of production. Labour may be skilled**,** semi skilled or unskilled**.** It can be physical or mental effort put in the production process. The reward or payment for labour used in production is called **Wages**.

Characteristics of labour

- It is in form of human beings
- It is perishable
- Higher wages increase its supply and low wages reduce it
- It has a weak bargaining power
- It has inelastic supply, especially if it is skilled.

Importance of labour

It utilizes land and capital for production to occur

It determines the value of a good

It creates capital by accumulation of rewards it gets from offering the labour.

Efficiency of labour:

It refers to the quantity and quality of any commodity, which is produced by labourers.

Factors determining the efficiency of labour

a) **Climate (weather conditions)**; Labourers can work for longer hours in farms in cool climate rather than those in very hot climate.
b) **Length of working**: Specific working hours should be given to labourers as long hours discourage workers and reduce their inputs.
c) **Individual qualities**: Most efficient workers possess some outstanding qualities, such as honesty, intelligence, strength, courage, ability to work for hours without getting tired etc.

d) **Training / education:** A well-trained worker performs better work than untrained one who is lacking the required skill.

e) **Organization:** Productivity in most cases depends on the organization ability of the individual he uses. Poor organization will result into low yields.

f) **Fair and early payment (adequate and timely payment):** Prompt payment is quite essential in improving efficiency of labour as low wages and late payments discourage labourers.

g) **Equipment available:** The farmer's productivity depends also on the tools and equipment he uses. A farmer using a hoe produces less compared to one using a tractor.

Factors determining the supply of labour in Uganda

(Factors affecting the availability of labour)

a) Population growth and structure: A high population creates a big supply of labour. A population dominated by a large number of children does not produce many labourers.

b) **Wage levels and other benefits**: A rational worker will be attracted to a job which has high wages and fringe benefits.

c) **Availability of essential facilities:** Provision of essential facilities such as housing, medical and education makes the agricultural labour force more stable and efforts should be directed towards increasing these facilities to increase output in agriculture.

d) **Rural urban migration**; Many people are abandoning the rural areas for the towns. This is causing reduction in agricultural outputs as those left behind are usually the old people. In order to reverse this trend rural development needs to be encouraged.

e) **The geographical labour mobility:** this can be increased by provision of transport and communication. Information on job opportunities in agriculture should be widely published to encourage the supply of labour in this sector.

f) **Attitude of men towards farm labour:** It is common practice for men in some rural communities of East Africa go to urban areas, seeking industrial employment, leaving the woman behind to attend to farming and rearing of livestock. This tends to create the imbalance between male to female ration of the urban and rural labour forces.

g) **Training:** Where training on job tasks is done more labour is available for production.

h) **Employment policy:** Favourable employment policies like reducing taxes on wages of workers attract more labour.

i) **Retirement age:** When the retirement age is higher, the labour supply also increases.

j) **Retirement benefits:** People are more attracted to those jobs that offer a favourable retirement package for them when they are out of job.

k) **Political stability**: Areas that are free of wars attract more labour than those having conflicts.

l) **Health of the workers**: The healthier the population the larger the number of labour force that they can provide.

How efficiency of labour can be improved

- By improving the wage rate in order to improve the standards of living and welfare of workers
- Providing training to workers to ensure acquisitions of skills and new ideas in their respective activities performed
- Providing efficient working tools or machines.it ensures speed, accuracy and increased output
- Proper supervision of workers. To ensure that workers perform their activities as required. It also helps to provide advice to workers where there is need.
- Specialisation. Giving workers specific tasks enables them to develop better skills on the job and become more efficient.
- Assign duties to workers appropriately. The load assigned to workers should be appropriate to ensure efficiency.

CAPITAL

These are resources used in the production of other resources. Adequate capital enhances productivity of other factors of production. Farm, capital includes:

I. Buildings.
II. Working tools or farm machinery.
III. Raw materials e. g fertilizers, seeds e. t. c

Types of capital

a) **Fixed capital:** This is also known as overhead capital, or assets. This includes buildings and roads.
b) **Semi - fixed capital**: 'this type of capital is productive in the short run. It includes machines used to accomplish farm work (milking machines, tractors) and breeding livestock (heifers and cows, egg laying chicken) e. t. c.
c) **Circulating capital**: This is also regarded as working capital. It includes cash used for regular expenditure on farm operations e.g. to buy fertilisers and animals for sale, like broilers, and beef animals

MANAGEMENT/ENTREPRENEURSHIP

This is the ability of the famer/ an entrepreneur to fully use the available resources so as to produce desired products.

Roles of a manager

a) Making day to day to day decisions on the running of the farm e.g. what crops to grow.

b) Implementing investment decisions i.e. he starts the business
c) Innovation i.e. introducing new ways of production.
d) Combines other factors of production to produce certain goods or commodity.
e) To raise financial and other resources through savings, borrowing etc.) To buy input requirements for the farm business e.g. fertilizers, feeds etc.
f) To bear all the risks of success or failure, and uncertainties concerning the enterprise.
g) To organize and supervise the factor inputs, like lab our, machinery.
h) To be the controller and last decision maker on how to use the factors of production.
i) To co- ordinate and plan the enterprise activities.
j) To keep records of the performance of the enterprise.

THE PRODUCTION FUNCTION

The production function is the quantity of a particular out produced as a result of using particular quantities of inputs.

An output refers to the quantity of a product obtained as a result of using a given amount of inputs in the production process.

Examples of output

a) Yield of maize
b) Number of eggs produced in a flock
c) Yield of cassava
d) Amount of milk produced etc.

Inputs are resources that are used in the production process in order to obtain output (yield).

Inputs are of two types namely

a) Variable inputs

These are inputs whose levels or quantities can be adjusted depending on the level of production.

Examples of variable inputs

a) Seeds for planting
b) Drugs
c) Livestock feeds
d) Pesticides
e) Labour
f) Unit of fertilizer

b) Fixed inputs

These are inputs whose quantities do not change enven if the level of production changes.

Examples

1. Quantities of Minerals
2. land

TYPES OF PRODUCTION FUNCTIONS

A production function assumes three forms, which may be treated as different types:

a) **Increasing returns**: In this type, each additional unit of input results in a large increase in output than the previous one.

Table below shows the influence of fertilizer on maize yield for the increasing returns.

Number of bags of fertilizer used	1	2	3	4	5	6
Number of bags of maize obtained	4	7	12	20	32	45
Increase in output per extra unit of input	-	3	5	8	12	13

Graph showing production function with increasing returns

b) **Constant returns**: The amount of the product increases by the same amount for each additional unit of a particular input.

Bags of fertilizer used kgs	1	2	3	4	5	6
Bags of maize obtained(output)	6	12	18	24	30	36
Increase in output per extra unit of input	-	6	6	6	6	6

Graph showing production function with constant returns

c) **Decreasing returns:** Here, each additional unit of input results in a smaller increase in output than the previous one. It is the most commonly encountered form in Agricultural enterprises.

Bags of fertilizer used(input)	1	2	3	4	5	6
Bags of maize obtained(output)	5	11	16	19	21	22
Increase in output per extra unit of input	-	6	5	3	2	1

Graph showing production function with decreasing returns

The law of diminishing returns (the law of variable factor proportions).

The law of diminishing returns states that if a variable input is increased while all other inputs are fixed (held constant), a point is reached where the continued addition of extra units of the variable input will give less than a proportional returns to each successive input of the variable

factor. This law is encountered in practically all forms of Agricultural production, and is useful in determining the rational and profitable level of production.

Concepts related to the law of diminishing returns

Total product

It is also called Total Physical Product (TPP). Total Physical Product (TPP) is the total amount of units of output obtained as a result of using a certain amount of input in the production process.

Average product

It is also referred to as the Average Physical Product (APP). The Average Product is the total product divided by the number of units of an input used.

$$\text{Average product} = \frac{\text{Total product}}{\text{Units of factor of production (inputs).}}$$

Example

By using 20 men as labourers a farm gets yields of maize of 2000kgs.Calculate the average product.

$$\text{Average Product} = \frac{2000}{20} = \mathbf{100}$$

This means that each labourer produced an average of 100kgs of maize.

Marginal product (MP)

This is also called Marginal Physical Product (MPP).It refers to the increase in total product as a result of using **one extra unit** of variable input in the production process.

Example

If a farm harvests 2000kgs of maize after employing 20 men labourers and the following season he decides to increase the labourers to 21 and realizes a total yield 2150kgs. Calculate the marginal product.

Solution

Marginal Product= 2150-2000 =150Kg

This means that the extra one man contributed 150kgs to the total produce. Without him the yields are expected to remain the same assuming the production conditions are constant.

Exercise

The table below shows the relationship between total, average and marginal product as the amount of labour used on one hectare of land is allowed to vary.

(i) Copy and complete the table.

(ii)Using a graph paper plot a graph showing the relationship between total, average and marginal product as the amount of labour used on one hectare of land is allowed to vary.

Land(Hectares)	**Labour Number**	**Total Product**	**Marginal Product**	**Average Product**
1	1	4	4	4.00
1	2	9	5	4.50
1	3	15		
1	4	19		
1	5	22		
1	6	24		
1	7	25		
1	8	25		
1	9	24		
12	10	21		

A GRAPHICAL RELATIONSIONSHIP BETWEEN TOTAL, AVERAGE AND MARGINAL PRODUCT

Region I / (stage I) /(irrational region)

i) Both total product and. average product are increasing, but total product is greater than average product.

ii) Both average product and marginal product are falling.

iii) Marginal product falls but remain positive.

iv) The farmer produces more and more output from every unit of input used so he should continue to produce.

v) Marginal product reaches its peak

vi) The producer under utilizes his resources in this region I and this is why it is called irrational region of production function.

vii) It is a zone of increasing returns.

viii) More and more profits are made in this region from every input used.

Region II (stage II) (rational region)

i) Total product increases at a decreasing rate than in stage A.

ii) Marginal is falling but remains positive.

(ii) Average product is also falling but remains positive.

(iii)Marginal product is lower than the average product.

v) Each unit of input added, produces less output than the previous unit.

vi) This is the region in which the farmer finds it is most profitable to produce, i.e. economic optimum level of production as a rule, profit is maximized in this region at the point where marginal cost (M. C) is equal to the marginal returns.

vii) In this region, the farmer exhausts all the profits that he can obtain by applying one extra unit of the input.

Region III/(stage III) /(irrational region)

i) This is the most unprofitable stage in the production of a farm as its total product, average product and marginal product all decline.

ii) Marginal product turns Negative. This reflects losses it is therefore a stage of non economic sense.

Practical examples where a farmer operates in each of the regions.

Region I

1. Using few labourers on a piece of land
2. Using less fertilizers than optimum
3. Underfeeding farm animals
4. Very wide spacing of crops
5. Very few animals on a big farm land

Region II

1. Using optimum number of labourers on a piece of land
2. Using optimum amount of fertilizers in the farm
3. Giving optimum quantities of feeds to farm animals
4. Having optimum plant population in the garden.
5. Very optimum number of animals on a farm land

Region III

1. Using too many labourers on a piece of land
2. Using too much fertilizers
3. Over feeding farm animals
4. Very close spacing of crops
5. Overcrowding livestock on a small pasture land
6. Keeping off layer birds
7. Rearing of over aged pigs

PRODUCT-PRODUCT RELATIONSHIP

A) Joint products: These result from a single production process in the farm. Two products are said to be joint, if the allocation of resources in production of one usually the main product automatically results in the production of the second one:

Examples

i) Poultry produce eggs and they are sold as off layers to produce meat.

ii) Cotton and cottonseeds.

iii) Beef, hides, and horns

iv) Wool and lamb

v) Milk and butter

vi) Beef and hide

vii) Pork and bacon

viii) Mutton and skin

ix) Honey and wax

B) Competitive products:

Competitive Products are products which require the same resources in their production process. In this situation an increase in the production of one product automatically decreases the production of the other.

Example

Keeping livestock and growing of crops on the same farmland. If the area under crop production is increased, the area under animal production has to be reduced. Both products are competing for the same resource of land.

C) Complementary products:

These are products in which the transfer of resources from one product to another results in increased output of both products other factors held constant. However, this relationship does not last indefinitely because competition later sets in and there is decline in production of either one or both products.

Example

1. Growing legumes in a grass pasture

D) Supplementary products:

Two products are supplementary if production of one can be increased without affecting the output of the other holding other factors constant. All supplementary relationships are however

short lived and a continuous increase in the production of one will eventually result in a competitive relationship

Examples

1. Keeping a few local chickens on a dairy farm
2. Planting leguminous fodder trees on the boundaries of a banana plantation

TYPES OF COSTS OF INCURED IN AGRICULTURAL PRODUCTION

A) Explicit cost: These are expenditures incurred when hiring the resources used in the production process. These costs are easy to recognize and their quantities can be determined.

Examples

1. Costs of fertilizers
2. Cost of animal feeds
3. Hired labour
4. Cost of seeds
5. Cost of fuel
6. Cost of pesticides

B) Implicit costs: These are expenditures that are not easily recognized and are easily forgotten or ignored in farm accounting.

Examples

1. Family labour.
2. Managerial services offered by the farmer
3. Interest on own capital

C) Nominal costs: These are obtained when the costs of production are converted into monetary values.

Examples

1. Money used to hire land
2. Money for hiring labour
3. Buying fertilizers
4. Hiring machinery

D) Overhead or Fixed costs

These are costs that do not change with the level or scale of production. The farmer would still incur these costs even when nothing is being produced.

Examples

1. Salaries for permanent workers
2. Depreciation on machinery and farm buildings
3. Insurance costs
4. Taxation
5. Rent on land and permanent buildings
6. Maintenance of farm structures like dips, stores, water storage structures and silos.

E) Variable costs

These are costs that change with the scale or level of production or output. They increase as the scale or level of production increases and decreases as the scale of production decreases.

Examples

1. Costs of feeds
2. Cost of fertilizers
3. Hired labour
4. Costs of pesticides

A farmer does not incur any variable cost when he or she is not producing anything.

F) Total costs

This is the sum of fixed and variable costs.

Total costs = Fixed costs + Variable costs.

Total costs are considered when calculating net income or revenue.

Net income= Total income –Total costs.

Net income is also called profitability of the farm.

Example

Total cost of a vegetable farmer = rent on land + irrigation installations+salary for permanent workers + depreciation e.t.c (fixed Costs) when added to variable costs such as cost of labour, seeds, fertilizers, hired labour e.t.c

G) Average costs

This is the total cost divided by the number of units of output produced. Average costs is high if few units of output are produced this is because of the high fixed costs. As production increases these costs are spread over large number of units and gradually they fall.

H) Marginal costs

It is the increase in total cost due to raising the rate of production by one unit.

Example

If the cost of producing 5 Bags of cotton is 60,000 and that of producing 6 bags is 75,000. Calculate the marginal cost.

Marginal Cost=75,000-60,000=15,000

Ways of reducing costs on a farm in order to maximize profits

1. Using optimum quantities of inputs to maximize production and reduce the unit costs of production.
2. Diversification to ensure that loses made on one product are compensated by profits from another.
3. Liquidity which allows flexibility in production methods
4. Employ appropriate assets for optimum returns
5. Properly maintain the fixed assets to reduce decay and depreciation
6. Proper planning to ensure effective utilization of labour throughout the year
7. Specialization to increase on output.
8. Proper coordination and allocation of responsibilities to employees
9. Use of affordable resources in the production process to minimize costs
10. Ensure good working conditions for the worker to increase their productivity.
11. Proper supervision and monitoring of workers to ensure that there is no wastage of inputs.
12. Proper accountability of the funds to avoid over expenditure
13. Proper scheduling of activities to avoid loss of time
14. Training of workers to improve on their skill of production
15. Provide better tools and equipments to ease the production process.

RISKS AND UNCERTAINTIES

A risk

A risk refers to a situation in which the outcome can be predicted with a certain degree of probability and can be insured against.

Examples

1. Unfavourable weather changes; Bad weather hazards like floods, violent storms may occur during the rainy season but the farmers are not aware whether they will occur or not.

2. Theft; Labourers' can steal planting materials, tools, fertilizers and pesticides but no one can tell when this will occur.
3. Accidents to employees and employers; A farmer can expect something to go wrong on the farm depending on the kind of work being done but for sure the farmer cannot predict when it is likely to happen.
4. Pests; Most farmers are aware that their crops are likely to be attacked by pests but cannot predict whether this will happen and when.
5. Diseases; All though farmers may expect diseases to attack their crops or livestock they may not know whether this will happen or not.
6. Fire outbreaks/arson; it is difficult for farmers to predict whether there will fire will break out on the farm or not.
7. Poor health of farmer/members of his family; It is not easy to tell whether a farmer will be in good health or in bad health when much labour is needed.

Uncertainties

Uncertainties refer to a situation in which an outcome is unknown and therefore cannot be insured against.

Examples

1. Price fluctuations; although farmers expect fair prices at the time of planting, they have no knowledge of whether prices will fall or not.
2. Change in technology; Advancement in technology can make a machine or method of production outdated.
3. Unexpected change in demand; in this situation what farmers expect to be on high demand can end up being list demanded.
4. Unexpected change in government policy; For example the government can ban smoking causing total loss to tobacco producers
5. Breach of contract; Sometimes agreements made between farmers and suppliers of inputs and buyers of products can change their mind abruptly when the farmer is not aware.
6. Transport unreliability; It is difficult to know whether farmers will get transport for their products to the market or not.
7. Crop uncertainty; sometimes farmer may experience crop failure hence end up making unexpected losses.

8. Unexpected change in labour supply; the workers may go on strike making farm activities to stop.
9. Political instability; A war may break up and all farm inputs and outputs are destroyed.
10. Change in management policy; A new management can take over a farm and decides to replace all the old workers with new ones.
11. Unavailability of inputs; some inputs may be out of stock like pesticides which may lead to total loss of the crop.

How to reduce the effects of risks and uncertainties

1) Diversification; the farmer produces both crop and animals on the same farm or grows different crops or keeps different animals to avoid total loss.
2) Input rationing; the farmer reduces the quantity he applies to any one enterprise to reduce losses
3) Selecting the most certain enterprises; which are less affected by risks
4) Flexibility in production methods to avoid total loss in case there is failure in one method
5) Insurance; a farmer insures his animals or crops or machinery
6) Formation of cooperatives to ease marketing
7) Production under contract; the farmer grows crops or raises animals at a price agreed upon in advance with the buyer
8) Maintain owner equity/savings; to meet unforeseen expenses
9) Flexibility in use of resources; for production of different enterprises.
10) Growing quick maturing crops; that can escape drought
11) Use of better farming practices to reduce losses early planting, weeding, spraying, early harvesting
12) Use of pest/disease resistant crops/animals to reduce loss
13) Selecting the most liquid enterprises; which can easily be converted into money to avoid loss
14) Use of proper storage facilities; to avoid loss
15) Carry out fencing /paddocking to reduce theft
16) Carry out irrigation to overcome effects of drought

PRICE THEORY

Price is the amount of money paid in exchange for a good or services. Price theory is concerned with the determination of price or any commodity; price is determined where demand for and supply of any commodity are equal to each other.

DEMAND:

It refers t the quantity of a commodity a buyer is willing and able to buy at given price within a given time. This is called effective demand.

FACTORS THAT AFFECT DEMAND OF A COMMODITY

i) Taste and preference, a commodity which is liked/preferred is more demanded.
ii) Price of the commodity, the lower the price the higher the demand.
iii) Income of the consumer, increase in the income lead to increased demand of the commodity
iv) Price of substitutes, if the price of the substitutes is high, demand for other increases.
v) Price of complementary commodities, increase in price of one leads to decrease demand for the other.
vi) Sex, particular commodities are demanded more by particular sex e.g. apples are more demanded by females
vii) Age, certain commodities are more demanded by youngsters than elders e.g. chocolate.
viii) Size of the population in the market, the more the number of people the more the commodities demanded.
ix) Government policy, high taxes increases price hence demand decreases.
x) Level of technology involved, high technology increases price of a commodity hence lowering the demand.
xi) Quality of the commodity, high quality commodities are highly demanded and vice versa.
xii) Level of advertising, creates awareness hence increase the demand of the commodity.
xiii) Future price expectation, more of commodities are bought in anticipation of future increase in price and vice versa.
xiv) Fashion — New/ certain fashion have high demand.
xv) Festivities / seasons, during certain seasons the demand of certain commodities increases.
xvi) Education level, as the. Education level of an individual increases the demand for certain commodities increases.
xvii) Religious and customary beliefs; certain religious beliefs prevent consumption of certain commodities e.g. demand for pork in Moslem area is low.

FACTORS THAT AFFECT THE PRICE OF A COMMODITY

i) Change in demands, as demand increases price is expected to increase and vice versa. V

ii) Change in supply, as supply decreases price increases and vice versa

iii) Change in quality of the product, high quality produce fetch high price and vice versa.

iv) Change in government policy on taxation and subsidies e.g. high increase in taxation increases price and vice versa.

v) The cost of production if cost of inputs is high then increase in price of the commodity will increase and vice versa.

vi) Seasonality/ festivities, during certain seasons price of commodities increase e.g. the demand for beef increases during chrishmas season.

vii) Marketing cost, the higher the marketing cost the higher the price and vice versa.

viii)The nature of the market structure i.e. in the monopolistic markets, it is the producer who determines the price while in competitive markets, it is the force of demand and supply, which determine the price.

ix) Speculation; once scarcity of a good is anticipated in the near future the price of those whose supply is to increase, the price will remain stable.

THE DEMAND LAW

The law of demand states that the quantity of a commodity demanded varies inversely with the price offered other factors held constant.

Demand schedule

The demand schedule is a table showing the different quantities of a commodity that would be bought at different prices at a particular time.

Demand schedule for groundnuts in Nakasero market in April and May 2004.

Price per kg of groundnuts(Shs)	**Quantity of groundnuts bought per week(Bags)**
900	2450
1000	1850
1100	1400
1200	1070
1250	830
1400	650

1450	500
1500	380

Demand curve

This is a graphical representation of the demand schedule hence the curve shows the relationship between quantities of a commodity demanded and prices. The curve slopes from left to right downwards. This means that people buy more at lower prices and vice versa.

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ELASTICITY OF DEMAND

This is the responsiveness of demand to changes in price. It is common to measure the relative changes in percentages.

E_D = Percentage change in quantity demanded / Percentage change in price.

EXAMPLE1:

If the price of beans is shs. 1000 per kg. The amount bought by a family per month is 5kg. The price then increased to shs 1500, and as a result, the quantity bought falls to 3kg per month. Calculate the E_D for the beans.

Solution

Elasticity of demand (E_D)= Percentage change in quantity demanded / Percentage change in price

$$E_D = \frac{5-3}{\frac{1500-1000}{1000}} \times 100\% = \frac{40\%}{50\%} = \mathbf{0.8}$$

CONCLUSION: when E_D is greater than 1, demand is said to be Elastic, but when E_D is less Than 1 demand is said to be inelastic; when E_D is equal to 1.O, E_D is said to UNIT.

ELASTIC DEMAND:

This is the type of demand, which responds to slight price changes. Examples of this are shown goods, winch are luxury in life e.g. Watches, earrings, beer or goods which have many substitutes or goods, which have several uses.

INELASTIC DEMAND:

A slight in price cause a big variation in the quantity demand It is the type of demand, which does not respond much to price changes e. g. The demand for the basic necessities of life e.g. food and most of the agricultural products that do not have close substitutes e.g. salt. This occurs when a big fall or rise in the price results in a co despondingly small rise or fall in quantity demanded.

Supply

This is the quantity of any commodity, which is offered for sale at any price at a given time keeping other factors constant.

The law of supply

The law of supply states that when price raises quantity supplied increases and when price falls supply decreases other factors held constant. The supply curve rises from left to right upward. This means that people are willing to offer more for sale at higher prices.

Supply schedule

Supply schedule is a table showing the different quantities of a commodity that are supplied for sale at different prices at a particular time.

Supply schedule for maize grain in Nakasero market in April and May 2004

Price per kg of maize grain (Shs)	**Quantity of maize grain supplied per week**

	(Bags)
180	380
200	500
220	650
240	830
250	1070
280	1400
290	1850
300	2450

Supply curve

The curve showing the relationship between quantities of a commodity supplied for sale and prices is called the supply curve. This is the graphical representation of the supply schedule.

Supply curve for maize in Nakasero market in April-May 2004

The supply curve slopes from right to left, indicating that the commodity supplied is directly proportional to the price of the commodity. That is as the price of a commodity increases, the quantity supplied also increases. This is because the sellers would like to benefit from high prices

and make maximum profits. As the price falls, the sellers are discouraged and they prefer to withhold their commodities, hoping that prices may rise in future.

Factors affecting supply of agricultural products

i) **Market price**; if the market price is high the supply will be high provided other factors are held constant.

ii) **Number of sellers;** the higher the number of sellers, the more the quantity supplied in the market.

iii) Price of other products;

(a) **Substitutes in production**; A change in price of one will affect the supply of the other. If the price of tomatoes rose higher than that of cabbages the farmer will divert more land to the production of tomatoes at the expense of cabbages causing supply of cabbages to fall.

(b) **Complementary in production;** the production of such commodities goes hand in hand e.g. production of beef and hides. An increase in production of one product automatically increases the production of the other.

iv) **New technology;** improved technology leads to increased production hence more supply of the agricultural products will be realized by the farmers

v) **Price expectation**; if the prices of a particular product are expected to rise in future at a particular time then the supply of that product at that time will be low and vice versa

vi) **Peace and security;** a politically stable situation provides security and this encourages the producers to increases their output and consequently the amount available for supply.

vii) **Weather condition**; Good weather conditions ensures high yields and bumper harvests hence more supply of products.

viii) **Government policy;** reduced taxes on inputs like fertilizers encourage farmers to produce more hence more supply.

ix) **Cost of production of the commodity;** Arise in prices of inputs would lead to reduced production which in turn would lead to a fall in supply.

x) **Pests and diseases;** areas heavily affected by pests and diseases tend to have reduced output hence reducing supply of agricultural products.

xi) **Natural hazards;** can affect the supply of agricultural products very strongly examples of such hazards include drought, hail stones, fires, floods are natural hazards.

xii) **Transport costs**; efficient means of transport increases the supply of commodities by making it possible to deliver commodities on the market as quickly as possible.

xiii) **Gestation period;** When the gestation period is short, the supply of that commodity can be easily increased than when the gestation period is long.

xiv) **Managerial efficiency;** Good farm management increases output on the farm and hence leads to the increases in supply of agricultural of commodities to the market.

xv) **Number of sel**

xvi) **lers in the market**; the more sellers of a commodity, the higher the supply of the commodity.

xvii) **Imports and exports;** if the government increases imports of a particular good, this will lead to an increase in the supply. On the other hand, export of a good reduces the local supply of it.

xviii) **Aims of the business or the producer's objectives;** farmers who aim at maximizing profits produce more and hence this leads to increase in supply.

The relationship between demand, supply and price; equilibrium price

This is the price at which demand and supply are equal. That means whatever is offered for sale at mark is bought. The balancing of supply and demand at a certain price level can be illustrated with the following example for meat.

Price per kg	Meat demanded (kgs)	Meat supplied (kgs)
2500	85	200
2000	95	185
1500	120	120
1000	140	60
500	165	45
250	196	0

Curve copy form volume II

A price of 2500 per kg will attract plenty of meat (200kg) but the consumer can only afford to buy 85kgs. At a price of about 1500 per kg consumers will take UP 120 kgs, of meat and this is just what is attacked from suppliers. So shs 1500 is the equilibrium price and l20kg is the equilibrium quantity. If the price is higher than shs 1500 then the supply will be greater than demand and there will be surplus hence prices will fail. If, on the other hand, the price is less than 1,500 shs demand will be greater than supply hence shortage and rise in price.

Determination of price of agricultural products

How are prices of agricultural products determined

Price of agricultural products is determined in the following ways

1. Using forces of demand and supply/equilibrium price.
2. Government setting up fixed prices/price control.
3. Through auctions where the highest bidder takes the product.
4. Bargaining/haggling on a small scale where the buyer and farmer come to a compromise.
5. Contract agreement/contract pricing; price agreed upon before producing the good.
6. Cost of production plus profit method; price determined after summing up the production cost and expected profit.
7. Through international commodity agreement.
8. Through resale/retail price maintenance.
9. Competitive pricing taking

MARKETING OF AGRICULTURAL PRODUCTS

Meaning of marketing

Marketing is the process whereby goods or services move from the producer to the final consumers or marketing is the process of providing goods or services which are essentially needed by consumers.

A market on the other is a situation where there is buying and selling of goods or commodities.

A market system is a connecting link or bridge between the producers and consumers. It involves the movement and exchange of commodities as they move from the producer to the consumers in the right time, place and in the right form.

For goods to reach the final consumer, it undergoes several stages which are referred to as market functions.

Marketing functions

These are business activities associated with the product as it is prepared for sale to the consumers. Market functions include the following.

1. **Buying**; the marketing agents buy produce from the producers at the agreed price in small lots. The produce is then put in one place ready for transportation to the consumer/market.
2. **Bulking;** the small lots bought from different producers are assembled at one centre for easy storage/transportation.

3. Sorting; this involves removing foreign materials from the produce. Sorting improves the quality of the commodity and makes it more acceptable to the buyers.

4. Transport; produce is removed from the production centres/rural areas to distant areas for better prices/get transformed into better products (processing).

5. Storage; at every level of marketing, there is storage either of raw produce or processed products. Storage ensures continuous supply of produce to consumers and prevents wastage due to weather or pest damage.

Advantages of storage

1. To ensure that the supply of commodities is kept more or less constant
2. To provide security to the commodity to avoid it being stolen
3. To allow processing be spread more evenly throughout the year
4. To give time to the commodity to improve in quality e.g. cheese and wine.

6. Processing; the goods are changed into more usable forms for easy storage, packing, transportation etc.

Advantages of processing

1) Prolongs the usefulness/shell life of the commodity.
2) Eases utilization e.g. grinding of maize into flour
3) Adds value to the products by increasing their quality
4) More products are got from on single product e.g. butter, cheese, ghee from milk.
5) Detoxifies in some products e.g. roasting soya beans destroys the trypsin inhibitor.

7 Financing; at all stages of marketing, capital is needed to pay for the goods from the producers and finance other marketing functions.

8. Grading; This refers to the grouping of commodities into separate batches with similar characteristics or qualities. Commodities may be graded basing on size, shape, colour, variety , juice content, degree of ripeness, taste, flavor, commercial value e.t.c. or This involves putting goods in uniform lots depending on size, colour etc. This enables pricing to be done easily.

Reasons for grading agricultural commodities

1. Grading facilitates the distribution of commodities according to demand and affordability.e.g. commodities of high grade can be taken to the super markets where price are high, while those of low grade are sent to the local market where the consumer prices are relatively lower.
2. Pricing of commodities on the basis of grades encourages farmers to produce and market good quality commodities which increase the incomes of farmers.
3. Spoilage of commodities is reduced when high grade commodities are separated from those of low grade. E.g. a rotten or cracked tomato can be a source of infection for other tomatoes in the container.
4. Grading increases the satisfaction of consumers' because the consumers are able to get exactly what they want and what they can afford to buy.

9. Standardization; this involves making quality specifications regarding quantity e.g. 1 kg packet of sugar, 20 jerry can of cooking oil etc. this enables pricing to be uniform and stable country wide.

10. Packaging; this is putting of produce in containers to ease handling and marketing.

Advantages of packaging

i) It reduces bulk/occupies a small space.
ii) Packed products are easier to handle/handle/store
iii) Easier to identify quality of packed product

iv) Assist in advertising of products/attracts customers/eases handing

v) Packed products are less likely to be adulterated.

vi) Easy to sell/retail

vii) Reduces external contamination

viii) Increases shelf life/keeping life e.g. UHT milk

ix) Facilitates labeling /putting instructions on how to use the product etc.

x) Easier to identify the quantity of the packed products.

11. Risk bearing; at any stage of production there are risks to be encountered. The marketing agency has to ensure against these short comings so that the market functions are not hampered.

12. Marketing intelligence; this involves the collecting and interpreting data from various areas concerning the market. Market research is essential to evaluate different marketing channels.

13. Inspection; this is the physical examination of the commodity by appointed officers for the purpose of establishing the grades of the commodity.

14. Advertising/sales promotion; this creates awareness of a particular product to the consumers.

Advantages of advertising

i) It creates demand for a new product.

ii) To inform consumers of a new product or change in product

iii) To persuade customers to switch to the product

iv) To persuade or inform customers of the products superiority

v) To remind or keep customers thinking of the product

vi) It informs the customers of the incentive for buying a given product thus increasing sales

vii) It increases awareness of consumers about the new and old product

viii) To increases profitably in the long term views

ix) To create awareness about the company or enterprise

x) To create competition to increase or maintain a market share of the product

Problems of marketing agricultural products

The problems that make marketing of agricultural products difficult stem from the characteristics of the products themselves mainly. Some of the characteristics are; bulkiness, persishability, seasonality, seasonality, gestation period, synthetic substitutes, elasticity of demand and quality.

Other problems are price fluctuation, government policy, storage, insecurity, transport, lack of processing facilitities and lack of market information. These are explained in below.

1. Bulkiness; most agricultural products have low value compared to their weight. Most products have a high percentage of wastes which makes transportation and storage difficult.
2. Perishability; most agricultural products cannot keep fresh for a long time. This is so because they have a high percentage of water when fresh they easily go bad e.g. milk, vegetables. Farmers end up selling their perishable products at relatively low prices.
3. Seasonality; products are seasonal in nature i.e plenty in particular season and scarce in another or plenty after harvest and scarce between planting and harvesting. There is no constant supply which leads to price fluctuation. The prices also tend to fluctuate with the season.
4. Long gestation period; some crops take long between planting and harvesting especially perennials. It becomes difficult to adjust output depending on market demands.
5. Poor quality products; some products are often of mixed quality, damage from pests and weather, handling while harvesting among others lead to low market demand. Most often the prices offered is low.
6. Competition from synthetic substitutes; synthetic materials have been produced which have a relatively high demand. Cotton and rubber are some of the agricultural crops having rayon, nylon and plastics as substitutes.
7. Limited elasticity of demand; inelastic demand for most agricultural products as they are foods, consumption remains the same even when the price falls.
8. Price fluctuation; prices for agricultural products keep changing from season to season. This affects marketing for example the price for coffee and cotton have always been fluctuating.
9. Poor storage; storage is one of the problems farmers face. Since most of the products are perishable and seasonal in nature, proper storage facilities have to be in place. This is not the case in many parts of Uganda and the products end up being damaged by weather, pests or stolen.
10. Poor transport; roads from rural areas where production is taking place are in bad state. This makes transport difficult and expensive.
11. Insecurity; high way robberies, political instabilities (wars) make marketing difficult as producers have no control over them.

12. Large number of small/independent farmers; there are many small producers scattered all over and these individually may be unable to determine the price. Price is determined collectively.
13. Unfavourable change in government policy; taxation which is imposed on inputs is high which affects production.
14. Lack of processing facilities; most of the agricultural products in Uganda are sold off in their low form in which they attract the least price.
15. Lack of market information; there is poor collection and dissemination of market information as regards prices, availability of market etc. the farmers then produce what may not be required and so fail to market their products.
16. Unfavourable cultural /religious beliefs; some products are not marketed in particular communities e.g. pork in a Muslim community and mutton among the Bahima.

Solutions to marketing problems

1) Provision of credit/loans to agents as this will enable them to finance the marketing process.
2) Construction of proper storage facilities to aid collection and assembling of the price. Good storage stabilizes supply and reduces losses due to spoilage.
3) Processing industries should be constructed to improve on the quality. Reduce bulk, increase value e.t.c
4) Improvement services should be availed to the farmers regarding market information and research.
5) Formation of cooperatives as this will enable the farmers to pool resources and have a common voice to overcome the outstanding market problems.
6) Trade contracts as this ensures a steady market in a way that prices are determined in advance.
7) Establishment of processing industries; to improve on the quality and longevity of products
8) Establishment of proper transport infrastructure to help in movement of products from production centres to consumption centres.
9) Proper extension services to the farmers to enable the farmers produce products of the right quality that would fetch higher price.
10) Market diversification which involves opening up of new markets to consume excess produce

11) Carrying out advertisement to increase on the sales of the produce.

12) Establishment of buffer stocks and price stabilization funds to reduce on the fluctuation of prices of agricultural products

13) Ensuring political stability to avoid losses due to theft of produce during wars.

MARKETING STRUCTURE

A) Perfect competition: This type of competition exists when no single buyer or seller is capable of changing the market price.

B) Imperfect competition: In this case, one seller or a group of sellers controls the whole supply of a particular product. The sellers of a group have some kind of Agreement among themselves. Imperfect competition may occur due to the following reasons.

i) The producer sell products, which differ from one another and the consumers have some choice among the varieties.

ii) There is no close substitute for a product.

C) Monopoly: This means a sole seller, therefore there is no competition at all although monopolist is the only supplier of a certain product, he can raise the price of the product up to a certain level as the consumers are likely to switch on to other products V which may be relatively good substitute. V

D) Oligopoly: This strictly means few sellers who sell a particular product. Each seller is free to fix the price of his product although he has to consider the prices charged by other competitors

Marketing agencies and institutions

i) Middle men (itinerant trader) - Is one who buys from the producer and sells to other agencies.

ii) Wholesaler — Buys in bulk and sells to the Retailers

iii) Retailer — Buys from the whole seller and sells in small units to the consumers.

Factors affecting the price of agricultural products

1. **Quality;** low quality products fetch less money on the market compared to high quality products.
2. **Seasonality/festivities;** the price of given products is determined by season e.g. during Christmas season, food commodities prices are usually high and seeds have a higher price during planting season.

3. **Cost of production;** if the inputs are bought at a relatively lower price, the final price is usually lower. However if the cost of inputs are higher, the final price is also likely to be higher for the producer to get profits.
4. **Nature of market structure**; in a monopolistic market, the price is determined by one person while in a competitive market (oligopoly), the higher the price and at low demand, price is low.
5. **Demand of the commodity;** the higher the demand for the commodity, the higher the price and at low demand, price is low.
6. **Changes in supply;** if the market is flooded with produce, sellers lower the price to get of the rid of the excess supply. When there is scarcity of a given good, the price tends to be high.
7. **Government policy;** this includes taxation and subsidies. When taxes imposed are high, the price will be high also. On the other hand if subsidies are given, the price of the good tends to be lower.
8. **Speculation;** once scarcity of a good is anticipated in a near future, the price of those whose supply is to increase, the price remain stable.
9. **Marketing costs**; this covers processing, transport, storage ,packaging etc and once the costs involved in the marketing process, the final products is also to be high.

Importance of prices in agriculture

1. Prices are an indicator to the farmer of which commodity to produce. Farmers aim at maximizing profits, so they need to invest where prices are highest.
2. Prices determine the level of output.
3. The prices act as a guide to economic activity, and allocate scarce resources efficiently.
4. Prices also allocate the workers to the right jobs, also where they are most efficient.
5. Prices are important because they co-ordinate consumption levels of agricultural produce through the forces of demand and supply.
6. Prices reward the factors of production and leave freedom of choice among producers and consumers.
7. When prices of certain commodities increase, this causes invention of better methods or techniques of production like use of efficient tractors, ploughs and others.

PRICE FLUCTUATIONS OF AGRICULTURAL PRODUCTS

These are sudden changes in the price of agricultural products that often rise and fall.

CAUSES OF FLUCTUATION IN PRICES OF AGRICULTURAL PRODUCTS

1. **Seasonality of agricultural production**; prices fall at harvesting due to high supply or vice-versa.
2. **Large quantities produced;** Leads to surplus produce which makes the price to become lower.
3. **Long production cycle;** hence there is uncertainty for the farmer the price he will receive by the time the crop is ready.
4. **Changes in supply and demand;** excess supply brings low price and vice-versa.
5. **Perishability;** the farmer is forced to sell immediately after harvesting when the price is low.
6. **Large number of producers;** non of whom can individually influence market prices.
7. **Natural hazards;** affect supply leading to price fluctuations e.g. pests and disease, bad weather.
8. **Low quality products or quality not uniform** due to bad weather or poor handling and therefore fetching variable prices.
9. **Inelastic demand;** when there is over production of food stuffs, demand may remain constant and prices fall.
10. **Bulky agricultural products;** it makes it difficult to transport them to distant places where prices may be high.
11. **Few manufacturing industries** that use agricultural products as raw materials, excess production therefore brings down prices.
12. Lack of farm groups/co-operatives, in this case, prices of the products cannot be pre-determined
13. **Competition raised by synthetic materials** e.g. nylon etc affect the prices of agricultural products e.g. cotton
14. **Poor transport system**; it makes it difficult to transport output to outside markets leading farmers to sell at low available prices.
15. Limited market, farmers are forced to sell at lower prices.
16. Government policy; high taxation or provision of subsidies may affect the prices.
17. Competition from imported agricultural products, rice imported from Pakistan usually affects the price of locally produced rice in Uganda.

EFFECTS OF PRICE FLUCTUATIONS IN AGRICULTURAL PRODUCTS

1. Instability of farmers' income which discourages farmers from participating in agriculture
2. It discourages saving making it hard for farmers to invest in capital assets like processing plants
3. It causes unstable government revenues making it hard to provide social services to the people
4. It increases risks in production leading to increased cost of production since there is need for insurance
5. It makes farmers unable to pay borrowed money hence the banks end up taking their collateral security like land , buildings etc.
6. It causes balance of payments and balance of trade problems hence forcing the country to rely on foreign aid
7. It may lead to political instability because the peasants tend to blame the government for the low prices of agricultural products
8. It causes rural urban migration since the youth go to towns to look for industrial employment.
9. It causes unemployment in agricultural sector and other agro based industries
10. It increases government expenditure in trying to subsidize for the agricultural sector
11. It discourages production of commodities whose prices have fallen and this is a problem if the product is essential e.g. food stuffs

MEASURES THAT COULD BE TAKEN TO REDUCE THE EFFECTS OF FLUCTUATION IN THE PRICES OF AGRICULTURAL PRODUCTS

1. Diversification; it is rare for prices of several products to fluctuate at the same time
2. Improvement of quality; prices of good quality products are more stable than of low quality products.
3. Improvement of marketing information provides farmers with prevailing prices so as to predict on changes of demand and supply
4. Forming farming organizations, farmers should organize themselves and market their produce through cooperatives and marketing boards
5. Buffer stocks; products should be stored and released when there is shortage/improvement of storage facilities in the markets stabilize the supply

6. Price stabilization fund; money should be set aside so that if there is over production the government buys off the supply
7. Industrialization; should be encouraged to reduce over dependence on agricultural products
8. Through international commodity agreement; to monitor and control prices of agricultural products
9. Improvement of communication/transport; so that commodities can reach distant markets. /Improvement of feeder roads.
10. Price legislation i.e. maximum price legislation.
11. Planning skill is imparted to farmers.
12. Formation of cooperatives will solve some of the problems, which cause fluctuations e.g. transportation, storage, teaching farmers better methods of farming, market-researching e.tc.
13. Processing Agricultural products to add value in order to increase market value e.g. homogenized, pasteurized milk, meatpacking, and fish tinning e.t.c
14. Research in Agriculture, which reduces the maturity period (gestation period) e.g. introduction of clonal coffee, cross breeding in animals e.t.c

SPECIALISATION AND DIVERSIFICATION

Specialization refers to the concentration on production of a single commodity or enterprise.

Advantages of specialisation

1) Farmer can master production methods
2) Increase in quality and quantity of produce due to mastery of the production process
3) Less time is spent per unit produced
4) It creates the need for trade to dispose off the surplus and this promotes cooperation between people and countries
5) Maximum returns possible from use of resources
6) Labour becomes specialized and competent
7) Easier marketing of one product

Disadvantages

1) Greater losses possible from natural disasters or price fluctuations
2) Non utilization of resources for part of year e.g. labour, ploughing implements.
3) Income not likely to be constant throughout a year.

4) Over dependence on others on what one has not specialized in.
5) It may lead to over production of a commodity leading to reduced market.
6) It limits occupational mobility of labour i.e. changing from one job to another becomes difficult.
7) Workers may become inefficient on job as a sense of responsibility is hampered by over specialisation.

Diversification

This is the production of several products at the same time.

Advantages of **Diversification**

1) Insurance against losses from a natural disaster e.g. after cattle plague from crops.
2) Income constant of farm throughout year from different enterprises.
3) Integration of farm by-products e.g. crop residues used for livestock feed, poultry litter used to improve soil fertility.
4) Efficient use of farm resources, especially labour and equipment, in all enterprises throughout the year.
5) Farmers or countries become more dependent and self sustaining.
6) Seasonal unemployment is reduced since labour is spread throughout the year.
7) It widens the export base of the country leading to more revenue.
8) Integration of farm by-products e.g. crop residues may be used to feed livestock.

Disadvantages

1) More difficult to manage and select combination of crops and animals
2) Many skills for workers to acquire
3) Pests and diseases can spread from one enterprise to another
4) More difficult to organize marketing of several farm products.

EFFICIENCY STANDARDS

Efficiency standards are those criteria that are used to determine measure or assess the performance of individual enterprises on a farm or the whole farm.

(i) Technical efficiency

Is the measure of physical out per unit input.

(ii) Economic efficiency

Is the measure of profitability of an enterprise. Here the costs of production are weighed against the returns obtained.

Importance of assessing the efficiency of farm

1. To determine whether the production methods being used are the most profitable.
2. To enable the farmers to make decisions about certain production methods/enterprises.
3. To compare the performance of the farms business with similar one
4. To enable a farmer to make plans for future development of his or her farm.

How efficiency in farming can be improved

1. Improved farming methods like proper land preparation, timely ploughing, spraying /weeding.
2. Improved management by careful planning and proper utilization of land and labour.
3. Mechanization to increase the rate and quality of a job.
4. Increase production by application of manure.
5. Acquiring knowledge relevant to the farm business.
6. Correct enterprise combination.
7. Keeping of appropriate records.

FINANCING AGRICULTURAL RODUCTION

One of the ways of financing agricultural production is by providing Agricultural credit to farmers.

Agricultural credit is the financial assistance given to farmers in form of loans, to finance their farm projects and repay it with interest.

IMPORTANCE OF ACQUIRING AGRICULTURAL CREDIT:

1) To purchase long term assets e.g. land, Machinery: e.t.c.

ii) To provide a working capital to buy inputs such as seeds fertilizers, herbicides, simple tools and equipments e.t.c.

iii) To overcome risks, and uncertainties in farming.

iv) To cope with season's patterns of production e.g. to hire more labour during peak period or hours.

v) Capital may be needed for the construction of farm structures and buildings.

TYPES OF AGRICULTURE CREDIT

A) Short term loan: Repayable within one year and it is used to purchase seeds, fertilizers, animals feeds e.t.c.

B) Medium term credit: Repayable within 2 -5 years and is used to finance projects e.g. purchase of fencing materials, purchase of live stocks, light farm equipment, e.t.c.

C) Long term credit: Repayable period is up to 15 years and even more. It is given for the long term or durable projects e.g. purchase of land, construction of soil and water conservation projects farm building, irrigation projects for perennial cash crops e.g. coffee, farm machinery and implements.

TYPES OF LOANS:

A) Hard loans: This is the money borrowed and has the following characteristics

i) There is no grace period given i .e period given before repayment starts.

ii) It as a high interest rate

iii) Given only under or with a substantial security.

B) SOFT LOAN: this is characterized by:

i) There is a grace period given.

ii) There a low interest rate

iii) Given under no any substantial security.

SOURCES OF AGRIUCULTURAL CREDIT

i) Commercial banks e.g. Stanbic, Barclays, e.t.c.

ii) Insurance companies e.g. Global Insurance, East African general Insurance

iii) Private companies e.g. sugar corporation of Uganda limited.

iv) Individual money lenders

v) Agricultural finance corporations. .Kenya has a good example of such a body which lends for land purchase.

vi) Cooperative societies,

vii) Self-financing i.e if one can afford it, it is good to finance one self.

viii) Marketing boards may give short term loans.

REASONS WHY FARMERS FAIL TO REPAY CREDIT:

i) High interest rates charged by lending agencies.

ii) Misuse of credit.

iii) Fall in prices the produce.

iv) Defaulting / dodging about.

v) Insecurity, stolen.

vi) Poor management of enterprise.

vii) Failure of enterprises due to natural hazards.

viii) Timing of the credit may be to early or too late which affect over all interest rate.

ix) ill health of the fanner leading to poor supervision.

x) Poor marketability makes fanners to be exploited by buyers.

xi) Short repayment period.

xii) Death of the fanner.

xiii) Fall in demand.

xiv) High taxation of Agricultural products. ‘

xv) Inflation which increases production costs.

xvi) Most farmers (peasants) are not credit worthy as they are poor and therefore, unable to repay the loans.

FACTORS THAT MAY LIMIT THE AVAILABILITY OF CREDIT TO THE AGRICULTURAL SECTOR IN UGANDA:

i) Most farmers lack collateral securities required by most credit institutions.

ii). Most farmers have inadequate knowledge about the operation of credit institutions, after all most farmers are illiterate and therefore credit matters are not their concern.

iii) Urban location of most credit institutions, most credit institution are located far from easy access by the potential borrowers: Therefore farmers find it difficult, costly and inconvenient to chase loans from towns.

iv) Long term loans require supervision. This may be quite difficult, expensive and inconvenient mainly due to ;.ne scattered nature of farmers and poor roads in rural areas.

v) Credit from sellers of inputs or relatives and friends may be limited due to lack of credit worthiness of most money borrowers. After all such credit is not secured.

vi) Credit from government sources especially Entandikwa is inadequate to start one into serious business. Even they back period is very short, leave alone high interest rate charged.

vii) Agriculture is faced wilt a lot of risks and uncertainties and therefore most creditors do not like to lend to Agricultural projects.

viii) The majority of people are poor and therefore do not raise savings to be deposited in banks or lent out to friends or relatives, consumption is greater than savings. Even the high population growth rate that encourages the dependence burden does not allow accumulation of personal saving.

ix) Corruption and embezzlement of funds in credit institutions limits would be available credit. Even credit may b given to few selected people based on race, clan or religion. Therefore productive farmers may go without credit.

x) The existence of inflation in most developing countries reduces the real value of credit institutions may stand to loose.

xi) The cost of using capital (interest rates) is very high and does not motivate farmers to acquire loans from credit institutions.

FACTORS NECESSARY FOR SUCCESS OF AGRICULTURAL CREDIT:

i) In most cases Agricultural credit should be given in kind not in cash.

ii) Security demanded by credit institutions, should be the type, which farmers can afford.

iii) Government credit institutions should be given the logistics to enable them perform effectively e.g. transport, inputs, stationary, record books e.t.c.

PROBLEMS OF CREDIT ADMINSTRATION

i) Shortage of capital

ii) Shortage of trained staff for credit supervision.

iii) High rate of poor repayment of loans

iv) Poor management skills by the farmers.

v) Many of the farmers are still not aware of credit

vi) Limited facilities for land development

Vii) Rigidity in payment schedule

viii) High interest rate.

MEASURES TO OVER COME THE ABOVE PROBLEMS:

i) Coordination of credit supervision e.g. making use of normal extension staff and intensification of personnel training.

ii) Increase the local borrowing to raise more capital, the farmers should be helped to assume commercial attitude and save more.

iii) Improvement on collection and supervision of loans e.g. channeling repayment through cooperative societies and intensifying the farm visits.

iv) Intensification of farmer's knowledge on credit availability through frequent Visits or meetings and other forms of media.

v) Repayment schedules should be flexible to fit with maturity of enterprises.

FARMING ORGANISATIONS

Farming organizations are those organizations that are involved in assisting farmers to produce, transport, store, process and market agricultural products.

Types of farming organisations in Uganda:

i) Cooperatives.

ii) Government extension training centers e.g. district farm institutes.

iii) Research stations e.g. Kawanda, Namulonge, and Kabanyolo e.t c.

iv) Group farms e.g. prison farms of ministry of internal affairs.

v. Out grower schemes.

vi) Settlement schemes

vii) Young farmers association of Uganda i.e. mostly in secondary schools.

Benefits of farming organisations in Uganda

i) Farmers share overhead costs.

ii) The organization is able to buy inputs in bulk making the farmer buy at lower price.

w)Organizations eliminate the unnecessary profits made by middlemen in trade / business.

iv) Can integrate marketing processes like storage, packaging, and transporting e.t.c. thereby reducing marketing costs.

v) Provide high quality management since it can employ skilled personnel.

vi) Increase the bargaining power of the farmers to get higher prices for their products.

vii) Members can get marketing information / pieces of advice which are not normally available to individual farmers.

viii) It is easier for them to sell their products overseas where they get more profits.

ix) Members are able to participate in business and get exposed to commercial life.

x) Leadership and unity is developed among members where such organisations exist.

xi) Such organizations can be used to transform traditional farming methods in rural areas.

xii) It is easier for the farmers to get inputs such as improved seeds, fertilizers, hoes and other tools e.t.c.

xiii) Members can obtain credit facilities to help them in their farming activities more easily.

xiv) Members can get access to extension services more easily.

xv) Some members may be employed in the organization.

xvi) Members share profits/ dividends I losses.

xvii) Encourages members to save.

xviii) Members get improved storage facilities, transport services.

xix) They find market to the farmers produce.

xx) Provide processing facilities of farmers produce.

Problems of farming organisations in Uganda:

a) Low levels of literacy affect the effectiveness of members to participate.

U) Poor management and accounting / lack skills.

iii) Inadequate support from government/Government policies.

iv) Unfair competition from more powerful individuals and private companies.

v) Poor storage facilities.

Vi) Corruption by management.

vii) Inadequate financing of the organization makes it difficult to attract skilled managers and administration.

viii) Some farmers' organizations operate seasonally although they continue to draw salaries and allowances.

ix) Most of the organization are specialized and therefore affected when the price of the commodity they deal in falls i.e. price fluctuations.

x) Political, influence / interference.

xi) Political instability /insecurity.

xii) Poor transport facilities

xiii) Poor communication system.

xiv) Lack of markets for their productions.

CO-OPERATIVE SOCIETIES

A cooperative society is an association of persons who voluntarily join together for the purpose of carrying out a business.

FACTORS NECESSARY FOR THE SUCCESS OF A COOPERATIVE SOCIETY

i) Adequate financing / sound economic base; for running operation costs like payment of labourers.

ii) Adequate volume of business; in order to get profit from the business.

iii) Goals and objectives; for directing the activities of the society.

iv) High level of managerial ability and honesty; to reduce embezzlement and corruption.

v) Limited interference from the government; to ensure proper running of the society's activities.

vi) Loyalty of the members; so that they can fully support the activities of the society.

Principles that govern the activities of a co-operative society

i) Open membership to all person interested regardless of the sex, religion, race or political beliefs.

ii) Democratic control of the affairs of the society i.e. one man one vote

iii) Joining or leaving the society is on voluntary basis.

iv)Promotion of education among the members of the society.

v) Promotion of goods and services at small cost to members and general public

vi)Limited interest on share capital

vii) Neutral in community concerning politics or race or tribe

viii) Share fairly all the proceeds or dividends from the society.

Types of co-operatives.

1. Consumer co-operatives; these are societies which operate or sell retail shops to assist members in selling their products
2. Marketing co-operative; these avail market for the members' products.
3. Savings and credit cooperatives; these provide members with loan facilities for investment
4. Transport co-operatives; these provide transport facilities for members products.

5. Service co-operatives; these provide services like storage of agricultural products and insurance
6. Processing co-operatives; there function is to add value to agricultural commodities by changing them into more utilizable forms.

The functions / benefits of co-operatives.

1. Give credit to farmers; for investment in agriculture
2. Buy produce in bulk and retail them to farmers at reduced prices.
3. Provided transport to farmers; hence increasing profitability of agricultural enterprises
4. Provide inputs to the farmers at reduced prices; making it easy for the farmers to afford
5. Provide improved storage to the farmers; to prevent spoilage
6. Help to process the farmers produce; to add value to the products so as to fetch better prices.
7. Help to share profit and losses; hence avoiding total loss to an individual farmer.
8. They have better bargaining power therefore negotiate for better prices for farmers produce.
9. Encourage farmers to save; which increases their standards of living
10. Provide education to farmers; which increases their output, income and employment in rural areas.
11. Provide extension services to farmers; to improve production
12. Carry out market research; to avoid exploitation by middlemen
13. Market farmers products; to avoid exploitation by middlemen and avoid spoilage of produce in stores.
14. Advertise farmers produce; to create awareness of the products to the consumers
15. Enable farmers to share overhead costs
16. Provide jobs to the farmers
17. Encourage leadership spirit among members
18. Enable farmers get exposed to business and commercial life

Differences between co-operative societies and non-co-operative private sector business organizations.

Co-operative societies	***Non co-operatives***
Membership is open to everyone irrespective	Membership is not pen to every one

of religion, sex, tribe language or sex	
It is run on democratic basis	Decision making is by few people
Joining and leaving the society is entirely voluntary	A member may be forced to leave by others against his will
Profits are shared equally among	Profits are shared according to the number of shares held
Main purpose is to provide services to members	Purpose is to maximize profits on investment.

Problems or reasons for the collapse of co-operative societies in Uganda.

1. Lack of skilled management personnel; resulting into miss management
2. Lack of finds/capital; making it hard to run co-operative activities
3. Lack of proper transport system; leading to spoilage of produce on the way
4. Lack of storage facilities; leading to spoilage of produce
5. Price fluctuations of agricultural products; which discourages farmers from production
6. Irregular payment of farmers produce; this discourages farmers from producing
7. Un favourable government policies; for example banning of certain product from the market resulting into total loss
8. Political instability; leading of destruction of property
9. Lack of market for their produce; leading to losses
10. Seasonality in operation; leading fluctuation in members income
11. Unfair competition from more powerful individuals or companies
12. Lack of government support; leading to collapse of the societies
13. Poor communication system; leading to disagreements among members
14. Lack of commitment from members; hinders proper running of the cooperatives
15. Low level of literacy affect effectiveness of members to participate

Steps taken to solve some of the problems facing the co-operatives

i) Carry out seminars and in service courses to improve on the management

ii) Education of the farmers; to ensure that they can adequately participate in the running of the cooperative

iii) Fighting political instability to avoid destruction of property

iv) Fighting sectarianism and tribalism; to ensure that appointments are made on merit and there is no in fighting in the society

v) Encouraging diversification to ensure that the cooperative is in business throughout the year

vi) Giving credits to the cooperative societies to enable them purchase farm produce and finance other activities

vii) Building necessary infrastructure to enable the cooperatives societies transport to the storage or market centres.

viii) Giving storage support programmes e.g. building large stores for the societies.

ix) Facilitation of the farmers to interact with other farmer, trade fairs, conferences e.t.c

x) Provision of extension services to increase the quantity and quality of farm produce and so ease its marketing

xi) Providing farm inputs at reduced prices to facilitate investment.

xii) Expansion of markets both local and external e.g. through COMSA and PTA

xiii) Strict anti-corruption measures to reduce corruption and emblements of cooperative finance.

FARM RECORDS

Farm records are written documents of the activities carried out on the farm containing information for future reference.

Characteristics of a good farm records.

i) Should have a title

ii) Should be easy to prepare

iii) Should be of the correct format

iv) Should be accurate containing all the relevant information.

v) Should be easy store and handle

vi) Should be easy to interprete

vii) Should be specific i.e. should have a specific period

Importance of keeping the farm records by a farmer

i) Enables a farmer to find out whether he is operating on a loss or profit.

ii) They guided the farmer in planning and budgeting hence enables him to make sound decisions.

iii) They enable farmers to make comparisons among themselves and thus be able to improve their managerial skills and efficiency

iv) Records enable the farmers working on cooperative basis share profits and losses.

v) They help in tax assessment.

vi) Good records help the farmer to find out those areas that need to be improved.

vii) They enable the farmer find out the contribution of each enterprise to the overall progress of the farm.

viii) They enable the farmer to remember his debts so that he can pay them promptly.

ix) They enable the farmer to determine the number of workers and their wages.

x) With good farm records a farmer can be able to obtain loans from banks.

xi) They help the farmer determine his financial position.

xii) They help in settlement of an estate after the death of the farmer.

xiii) They show the history of the farm and tis development.

xiv) They act as incentive to the farmer as they show his progress.

xv) Helps farmers to cull unproductive animals.

xvi) It helps the farmer in valuing the farm in case of sale.

xvii) Are legal requirements in certain countries.

xviii) They help the farmer in making insurance claims.

Types of farm records

(i) Crop production records

Such records show

1. The kinds of crops in the field eg beans, cassava
2. Size of the land covered by each crop
3. Depths of planting, weeding ,spraying
4. Expected dates of harvesting
5. Crop products in store
6. Yields of previous crops
7. Inputs such as fertilizers, chemicals etc.

(ii) Livestock production records

Such records show

- **Milk production records, this shows**

1. Name or number of the cow
2. Date of milking.
3. Time of milking.
4. Total litres of milk produced.
5. Remarks.

- **Breeding records; this shows**

1. Identification number of sire
2. Indentification number of the dam (cow)
3. Breed of the bull or sire
4. Breed of the cow
5. Date of service
6. Expected date of calving
7. Date calved.
8. Number of gestations.
9. Sex of the calf.
10. Birth weight
11. Identification number of the calf
12. Next heat
13. Remarks

- **Health records**

1. Name or identification number of the animal
2. Type of diseases diagnosed
3. Treatment given
4. Date of treatment
5. Breed of the animal
6. Remarks
7. Expenditure records
8. Income records
9. Balance sheets
10. Trading or profit and account
11. Production/ yield records

12. Inventory records

These records show that all assets the farmer owns and the cash value of each asset as well as cash at hand and in the bank. Such records are usually made at the beginning of the financial year (opening valuation) and at the end of the financial year (closing valuation). Farm assets that are usually indicated in the inventory record includes the following.

1. Land
2. Crops in the field
3. Buildings
4. Machinery and equipment
5. Animals
6. Inputs in store (eg drugs, fertilisers, seeds for planting, livestock feeds, etc)
7. Store products for sale such as crop harvests

The assets should be valued basing on the current market prices. The inventory record enables the farmer to estimate or workout the net worth for the farm.

13. Operational records
14. Labour records

PROFIT AND LOSS ACCOUNT

This is a farm record which shows all transactions carried out by the farmer throughout the financial year.

Major features of a profit and loss account or trading account/Kind of information that is contained in a profit and loss account

i) Title showing the names of the owner of the farm and the duration.
ii) Purchases and expenses are entered on the left hand side.
iii) Sales and receipts are entered on the right hand side
iv) Total expenses and total receipts are indicated below the lists of expenses and receipts respectively.
v) Opening valuation, this refers to the value of all the items that a farmer has at the beginning of the year. It is entered under purchases and expenditure column. This is because it is assumed that of the farmer had to buy the farm at the beginning of the year that would be his expenditure.

vi) Closing valuation; this refers to the value of the farm at the end of the year. It is entered on the sales and receipt side.

vii) This is because if the farmer sold off the farm at the end of the year that is the amount of money that he would receive.

viii) There is a net loss or a net profit. A net profit is obtained when the value of sales and receipts exceed the purchases and expenditure.

ix) A net loss is got when the value of purchases and expenditure is greater that sales and receipts.

x) A net profit appears under purchases and expenditure side while a net loss appears on the sales and receipts side.

An example of a trading account (profit and loss account)

A trading account/profit and loss account of St. Mary's College Kisubi farm for the year ending 31/12/2003.

Purchases and expenses (Shs)		**Sales and receipts (Shs)**	
Opening valuation	1,250,000	Cash in hand	800,000
Poultry feeds	890,500	Cash in bank	450,000
Wages	600,000	Egg sales	2,550,000
Pesticides	150,000	Sales of off layers	650,000
Veterinary drugs	600,000	Sale of poultry manure	120,000
Depreciation of building	200,000	Debts receivable	400,000
Balance on loan	500.000	Closing valuation	1,800,000
Interest on loan	50,000		
Rent on land	1,000,000		
Debts payable	100,000		
	5,340,500		

Net profit	1,429,500	Net loss	-
Total	**6,770,000**		**6,770,000**

Balance sheet

The balance sheet is a statement which shows the financial position of the farm on a particular date, usually the closing date of the financial year or accounting period. A balance sheet consists of assets and liabilities.

Assets and liabilities

An asset consists of a list of value of all items the farm possesses while liabilities are all that the farm has to pay to other people.

When the value of assets is greater than that of liabilities, the farm is said to solvent. When the value of liabilities exceeds that of assets, the farm is said to be insolvent or bankrupt.

Assets cab be classified into ***fixed assets*** and ***current or variable assets*.** Fixed assets are those items that are permanent and can be used over several accounting year/ periods. They include breeding stock, permanent crops, machinery and equipment and farm buildings.

Current assets are those used up in a short time, usually one financial year. They included cash in hand and in bank, money that the farmer hopes to receive from goods sold but not yet paid for (debts receivable), inputs in store, animals for slaughter and short term crops. Assets are usually entered on the right hand side.

Liabilities

They are classified into ***long term liabilities*** and ***short time liabilities (current liabilities)*. *Long term liabilities*** are those debts that are to be paid for a long period, usually five years and above. They included loans for setting up permanent farm structures like buildings and fences, buying land and setting up an irrigation system.

Current liabilities are those debts that are to be repaid within a period of one accounting year. Examples include cash or inputs obtained on credit, interest on loan and salaries for labourers. Liabilities are entered on the left hand side of the balance.

Example of a balance sheet

Liabilities	**(Shs)**	**Assets**	**(Shs)**
Long term liability		**Fixed assets**	
Bank overdraft	2,250,000	Land	1,200,000
		Tractor and ploughs	1,800,000
		3 dairy cows	2,100,000
Current liabilities		**Current asset**	
Debts payable to creditors	1,400,000	Crop produce in store	450,000
Unpaid wages	250,000	Crop in the field	750,000
Interest on loan	140,000	2 heifers for sale	400,000
Net capital	4,650,000	Feeds and drugs	900,000
		Cash in bank	480,000
		Cash in hand	250.000
		Debts receivable	360,000
Total	**8,690,000**		**8,690,000**

Advantages of Preparing a Balance Sheet

1. Enables a farmer to acquire loans
2. Helps in decision making
3. Useful for purposes of sharing profits
4. Shows farmers possessions
5. Shows farmers debts in order to remember to pay
6. Enables a farmer assess the value of his land
7. Helps in planning
8. Shows the financial position of the farmer.

GROSS MARGIN

This is the difference between total revenue and variable costs or This is the difference between total income obtained from a product and variable costs incurred in the production of that product.

Gross margin = Total Revenue- Total Variable Costs

Gross margin is usually calculated basing on a hectare of land so as to enable a comparison to be made between different enterprises. Thus, gross margin per hectare equals total income from the product minus total variable costs incurred to produce the product. The enterprise that gives the highest gross margin is considered to have been more profitable than the others.

Gross margin can also be used to find out the total profit of the farm. This is obtained by adding up the gross margins of all enterprises on the farm and subtracting the fixed costs.

Gross margin of enterprise A

Gross margin of enterprise B } = Total gross margin

Gross margin of enterprise C

Total gross margin – Fixed costs = Profit

Example

(i) Calculate the total variable costs of cotton and maize from the data given

Cotton		**Maize**	
Ploughing	50,000/=	Ploughing	50,000/=
Seeds	5,000/=	Seeds	20,000/=
Weeding	70,000/=	Weeding	30,000/=
Pesticides	20,000/=	Pesticides	10,000/=
Picking	10,000/=	Shelling	5,000/=
Transport	5,000/=	Transport	10,000/=
Total	**160,000/=**	**Total**	**125,000/=**

(ii) Calculate the gross margin for cotton and maize

Cotton: Total revenue – Total variable costs

Total revenue = 600kg x 350/=

= 210,000/=

Total variable costs = 160,000/=

Gross margin = 210,000/= - 160,000/=

= 50,000/=

Maize: Total revenue – Total variable costs

Total revenue = 1600kg x 250/=

= 400,000/=

Total variable costs= 125,000/=

Gross margin = 400,000/= - 125,000/=

= 275,000/=

(iii) Giving a reason suggest which of the two crops the farmer should grow.

He would grow maize is more profitable/high returns.

Functions of gross margin

i) Helps in calculating profitability of the farm

ii) It shows the financial position of the farm

iii) In cooperative farming it helps in sharing profits and loses

iv) It helps in comparing performance of different farm enterprises and this helps a farmer in making a better choice of viable enterprise

v) It helps to know whether farm plans are being implemented correctly

vi) Helps when in settlement of an estate in case the farmer dies.

FARM BUDGETING

It is a plan of action showing the amount of money hoped to be spent and the expected income from an enterprise to be under taken on the farm. The budget should set out.

i) What to produce.

ii) How much to produce.

iii) How much resources will be required for production.

iv) Expected costs.

v) Expected returns.

vi) Expected profit or loss.

Advantages/Functions of the budget to a farmer

a) It helps a farmer to fore cast profits or foresee losses.

b) It is used in decision making when comparing alternative projects are to be undertaken.

c) It helps the farmer to control production on the farm.

d) It assists the farmer in making effective changes in organization.

e) It assists farmers to estimate the required production resources, in term s of labour, capital, fertilizers, feeds e.tc

f) promotes coordination among the managers who execute the activities of the farm

g) Provides a basis for performance appraisal

Problems in making a budget

1) Supplementary or complementary enterprises which could be produced without too much added costs may not be recognized by the farmer
2) The farmer may not have much imagination
3) There may be lack of technical information so unused resources may not be recognized
4) It is important that the farmer's interest in optimizing returns is sustained.

Types of budget

Partial budget

This type of budget is used in planning a small or minor change on to farm. It requires estimates of the extra costs and the returns expected from such a change. This is relatively simple budget, unless it involves shifting from one type of enterprise to another.

Complete budget

This type of budget is made when a complete reorganization of the farm business, involving change in enterprise, e. g from crop growing to rearing of livestock, or when a program for an entirely new farm is planned. It involves costing all fixed and variable costs, as well as returns expected. This implies that initially the profitability of the venture will have been established. Complete budgets should give an estimate of the next farm income left, after expenses. This net farm income would be the operator's reward for his lab our, risk bearing, and management skills.

The limitations should be identified like scarce capital, efficiency or organization, soil, fertility e.t.c

Steps in making complete budget

(a) State objectives of the business

(b) List all available resources.

(c) Estimate the hectare against livestock to determine ti' stocking rate.

(d) Estimate the physical inputs (e.g. fertilizers) and outputs.

(e) Work out an estimate of fixed costs such as rent and interest on borrowed capital

(h) The factor and product costs should be estimated as well cost of labour, management, and etc.

(g) Finally, the expected profit should be worked out.

Uses of complete budget

(i) To obtain an estimate of the future capital requirements of the farm business. The capital includes farm machinery, buildings and cash.

(ii) To accurately estimate the profitability of a business, taking into account appreciation of say, livestock, or depreciation of assets.

Sources of information relevant for making a budget (Aids to budgeting)

A farmer may use some of the following information for the purpose of making a budget.

Results from controlled experiments or research stations

Data concerning input-output relationship

Data on prices of inputs and products

Farm records

LAND TENURE

These are rules and regulations that govern the way, method or means of acquiring the right to own and use land for a certain period.

The systems of land tenure that are common in Uganda.

1. Individual ownership of land

This is also known as freehold land tenure, landlordism or private ownership of land. The individual landowner (landlord) can register the land and get a certificate called the land title

deed which allows him/her to own and utilize the land as he/she wishes. Landlord may have acquired land through inheritance from parents or purchasing it.

2. Communal land tenure

This is also known as customary land tenure. Under this system, the land belongs to a clearly defined group of people (e.g., clan) or a whole community in specified areas such as in Karamoja. All the members of the clan or community have the right to use that land according to the rules and regulations governing its use.

3. Co-operative land tenure

This is a system where the land is owned by a group of farmers who have come together to form a co-operative society. The co-operative society is given one land title deed and no individual member can claim to be the sole owner of that land. Each individual in that society is given a share

4. Leasehold land tenure

This is a system where the state or landlord gives land to an individual to use for a specified period of time. When the lease period expires, the lease can be renewed. The leaseholder pays land rent to the government or landlord. When an individual leases land from the government, the lease period is usually effective for 49, 99 and 999 years. The longer the lease, the more secure the leaseholder and the more encouraged he/she is to invest in long-term projects.

5. State ownership

In Uganda, some land belongs to the government and no person can claim ownership. People are allowed to settle on such land but can as well be displaced any time the government wishes to set up developmental projects on that land.

The advantages and disadvantages of each system of land tenure

Advantages of individual ownership of land

1. The landlord feels secure and is free to set up long-term developmental projects on that land.
2. The landlord uses the land with care so as to conserve its productivity.
3. The landlord can use the title deed as security to get loans from banks.
4. If the landlord does not sell off the land, his/her children and grandchildren are assured of having land for future developments.

Disadvantages of individual ownership of land

1. The landlord may fail to pay back the loans and end up losing the land and its title to the banks
2. Some landlords lack capital to set up projects on the land, hence leaving the land to stay idle or undeveloped.
3. Land disputes are likely to come up between tenants and the landlord in case they fail to pay the land rent, or the landlord decides to sell the land to another person.
4. Landlordism encourages unfair land distribution among the people, as some have plenty of land and others have nothing. People who do not have land at all are likely to encroach that of the landlord.

Communal land tenure

Advantages of communal land tenure

1. Every member of the community has access to the land, thus there are no landless people.
2. There are no serious land disputes, since the regulations of occupancy are very clear to every member of the community.
3. There is no land fragmentation since no individual is allowed to demarcate part of the land for his/her own use.

Disadvantages of communal land tenure

1. Land resources are poorly utilized. For example, where grazing is practiced there is overstocking and overgrazing due to uncontrolled livestock numbers. In areas where cropping is practices, there is over cropping which leads to land degradation.
2. Land users have no interest in developing or maintaining the productivity of such land since it does not belong to any individual.
3. Farmers fear to invest in long-term projects and improved farming techniques since they can lose such land at any time. Also, since the land belongs to the community, an individual is not allowed to use the land as he/she wishes. Everyone has to use the land according the regulations of occupancy. For example, if the land is for grazing, no individual is allowed to use it for growing crops.
4. It is difficult to register and acquire a title deed for communal land, which makes it impossible to use such land to get loans from banks.
5. It is impossible to control crop and livestock diseases and pests.

Advantages of co-operative land tenure

1. Good management and co-operative spirit can enable farmers to succeed in their farming enterprises. Sometimes, individual farmers are unable to raise capital for setting up enterprises, especially those that require a lot of capital and managerial skills. But with a combined effort of co-operate rnembers, such enterprises become easy to establish and to operate.
2. Land disputes are minimised since no individual can claim to be the sole owner.

Disadvantages of co-operative land tenure

1. The society may not achieve its objectives if some of the members do not work hard.
2. Poor management and embezzlement of funds by the leaders can lead to the collapse of the society.

Advantages of leasehold land tenure

1. The leaseholder feels secure to invest in long-term projects, such as growing perennial crops and setting up industries.
2. No land disputes are experienced since the state or
3. Landlord allocates land.
4. The system gives an opportunity to those who are unable to purchase land to rent land for farming and other activities.
5. This system enables the government and landlords to earn income in form of rent from the land that would otherwise remain idle.
6. Since the leaseholder is given a lease certificate, he/she is able to obtain loans from money lending institutions.

Disadvantages of leasehold land tenure

1. Sometimes the state or landlords can refuse to renew the lease when it expires, and the leaseholder loses the property if he/she invested heavily on the land.
2. The state can terminate the lease before the lease period expires, and then decide to compensate the leaseholder.

State ownership

In Uganda, some land belongs to the government and no person can claim ownership. People are allowed to settle on such land but can as well be displaced any time the government wishes to set up development projects on that land. The government may or not compensate them. Usually,

the state leases the land it owns and gives land titles to individuals who wish to set up long term developmental projects, such as industries.

Land Fragmentation

This is a situation where a farmer owns a number of small plots of land that are scattered in different places.

Causes of land fragmentation

1. Customary inheritance of property. Land and other assets are shared out equally among the heirs.
2. Increasing human population pressure on limited land resource. In some areas, the human population density is so high that progressive division of land among the heirs has resulted in individuals owning small plots.
3. The desire of farmers to increase the size of land for production. As the farmer's capital increases, he may wish to acquire more land for business expansion. He may therefore be forced to buy pieces of land from those who are willing to sell. Eventually, the farmer finds himself with scattered plots.
4. Government allocation of land to settlers in a new area. The government may decide to divide a large piece of land among the landless people who have been allowed to settle in an area.
5. Polygamy

Disadvantages of land fragmentation

6. It is difficult for the farmer to have easy access to all his or her plots, especially when using machinery, as there may be no direct route from one plot to another.
7. It is difficult for the farmer to efficiently supervise the activities being carried out on each of the plots.
8. The farmer wastes time in travelling from one plot to another.
9. It is difficult to make and follow a sound farm plan for all the plots, especially when the distances between them are great.
10. Since there is no sound farm plan made for the on-going farming activities, it is difficult for the farmer to get advice from the agricultural extension service.
11. It is very difficult for a farmer to control diseases and pests of crops and livestock on his/her plots, because neglected plots in the neighbourhood act as sources of infestation.

12. It is difficult for an individual farmer to carry out soil conservation measures, this requires collective effort by all farmers. The run-off from other farmers' fields cannot spare the conservation devices made on small plots.

13. Land fragmentation results in low agricultural productivity, which in turn leads to low standards of living and slow national economic development.

Land consolidation

Land consolidation is a land reform programme that involves joining together small scattered plots owned by farmers so that an individual gets one large piece of land. It is a give and take situation where farmers, accept to exchange plots. Each farmer surrenders plots that are far away in exchange for those that are neighbouring his/her homestead. This arrangement enables the farmers to acquire bigger units of land that can be economically operated.

Advantages of land consolidation

1. Each farmer acquires a large single unit of land that can be used to carry out meaningful business.
2. It becomes possible for farmers to carry out soil conservation measures.
3. Each farmer can register land and acquire a land title deed, which can be used to obtain loans from money lending institutions. Also the farmer becomes more secure to invest in long-term programmes and to conserve the land.
4. It is possible for those farmers who wish to practice farm mechanization to do so.
5. The time that was being wasted while moving from one plot to another is saved.
6. Supervision of the activities going on becomes easier and more efficient.
7. It is possible for the farmers to carry out sound farming before undertaking any activity.
8. Since the farming activities being undertaken are planned, it is possible for extension service officials to offer advice based on spot inspection to the farmer.

LAND REFORM

Land reform is a programme undertaken by government to reorganize or restructure the land tenure so as to permit better utilisation of land resources. Land reform may involve taking away land from the current owners and redistributing it to the people so that they can also have an opportunity to acquire land for various uses.

Reasons as to why it is necessary to undertake land reform programmes in Uganda.

1. To promote increased production
2. To attain flexibility in farming
3. To attain efficient utilization of land and labour resources
4. To promote cominercialization of agriculture

SETTLEMENT AND RESETTLEMENT

These are land reform programmes which involve the movement of people to new areas with the aim of boosting agricultural development in those areas. A settlement is an area which was previously not habited, where people have established their homesteads for the first time. Resettlement is a planned transfer of people from densely populated areas where there is acute shortage of land to the sparsely populated areas so as to ease land pressure. It is also done with the aim of giving land to landless people so that they can engage in economic farming.

Objectives of establishing settlement schemes

i) To relieve some areas of the population pressure.

Resettlement programmes that were carried out from 1945 to 1954 were aimed at redistributing people so that they could access more land for cultivation. People were moved from Kigezi to Ankole, Bunyoro and other parts of Uganda.

ii) To promote agricultural mechanisation. The strategy was to encourage farmers to unite and engage in economic activity as groups.

iii) To prevent re-infestation by tsetse flies. The major aim of the resettlement programmes of 1955 to 1961 was to prevent re-infestation of the cleared areas of Busoga and Kigumba by tsetse flies.

iv) To assess the feasibility and economic returns from setting up a large irrigation scheme. This was the reason of setting up Mubuku Irrigation Scheme in Kasese.

v) To resettle the displaced. Some settlement schemes were set up to serve as temporary homes for refugees mainly

Factors that favour the success of a settlement scheme

i) Proper planning
ii) Selection of settlers
iii) Land holdings
iv) Land tenure system

v) Supportive services
vi) Efficient communication
vii) Profitability of the enterprises to be undertaken

Ways in which settling and resettling of people in new areas can promote agricultural production

i) The land that would otherwise be idle is brought under production leading to increased output of certain commodities.
ii) Since individual farmers are allocated reasonable large land holdings, large scale commercial farming is possible.
iii) The farmers can benefit from the technical services.
iv) Social services are more easily extended to the framer.
v) Farmers are relieved of the congestion and other related problems of populated areas.
vi) It is possible for farmers to take up new farming innovations.

Ways by which an individual may obtain land for farming in Uganda.

i) Inheriting a piece of land from ones parents or relatives
ii) Being allocated a piece of land from ones parents or relatives
iii) Buying a piece of land and getting a freehold title for it
iv) Leasing land from the state of Uganda
v) Borrowing land from others.

Agricultural production

This refers to the production of crops and animals, which are of values to man.

Role of agriculture in economic development

i) Source of food to sustain the lives of human beings.
ii) They get income from sale of products; to help in management of family affairs.
iii) Source of foreign exchange this help government provide services to the people.
iv) Provides market for industrial goods like fertilizers and sprayers.
v) Agriculture leads to the development and improvement of infrastructure in an area.
vi) Agriculture earns capital for the development of other areas in the economy.
vii) Agriculture provides employment for many people in the country.
viii) Source of raw materials for use in industries eg cotton.
ix) Source of recreation.

x) Source of revenue for the government e.g. market.
xi) Source of medical products e.g. honey

Why is agriculture not developed in some parts of Uganda.

i) Poor breeds of animals leading to low yields.
ii) Lack of improved exotic breeds which are expensive.
iii) Conservativeness of the farmers making them unwilling to accept modern farming methods.
iv) Poor soils hence poor growth and yields of crops.
v) Pests and diseases which destroy the crops.
vi) Lack of market which discourages the farmers from farming.
vii) Use of poor tools and equipment leading to low production.
viii) Price fluctuation, which discourages the farmers.
ix) Aridity in some parts of the country; leading to poor growth of crops.
x) Cattle rustling, leading to loss of animals.
xi) Lack of proper storage facilities, leading to spoilage of products.
xii) Land fragmentation, leading to small sale production.
xiii) Lack of processing plants, leading to sell of products in raw form fetching low prices.
xiv) Perishability of agricultural products leading to spoilage.

Characteristics of agricultural production

1. Most agricultural products are seasonal; being excess just after harvest time and scarce towards harvest.
2. Agricultural products are bulky; and therefore difficult to store and transport. e.g. are not easy to store when in large quantities.
3. Agricultural produce is generally perishable and cannot be kept for long e.g. tomatoes, vegetables, milk, meat, e.t.c.
4. Most of the crops are produced by small-scale peasants. E.g.in Uganda, for instance all the cotton and coffee is produced by peasants.
5. There is stiff competition between some agricultural products e.g. cotton, hides with synthetics products e.g. nylon, polyester, synthetic leather e.t.c for the market.
6. The demand for agricultural products in the market is inelastic. That is, a change in price does not influence their demand very much.

7. It is very difficult to fully control the output of agricultural products because of other factors that cannot easily be controlled by the farmers e.g. weather, conditions, pests disease attacks e.t.c.
8. Most of agricultural enterprises have long gestation period e.g. coffee, tea and cocoa.

SUBSIDY SCHEMES

A subsidy is the help offered to farmers to enable them sustain agricultural business. Subsidies are inform of reduced prices for inputs or offering better prices for agricultural produce

Importance of subsidy schemes

1. They stabilise prices of agricultural products.
2. They stabilize farmers' incomes.
3. There is improved investment towards a subsidized product.
4. Subsidies can influence the terms of trade between agriculture and industry.
5. Subsidy schemes may have an important impact on the natural resources of the country e.g. a successful fertilizer program will increase yields.

Agricultural research stations and training centres

Research stations carry out the following

1. Development of new crop varieties through breeding
2. Improve the existing crop varieties
3. Testing of new varieties to determine how they perform in local conditions and certification of seeds
4. Comparing two or more varieties to compare their performance in a particular environment.
5. Soil testing and determination of optimum fertilizer requirement
6. Finding the best methods of protecting crops against pests, diseases and weeds
7. Testing chemicals for use with crops and animals
8. Improving livestock through breeding
9. Finding ways of preventing and treating diseases in farm animals and crops
10. Testing new machinery to observe its performance in new local conditions
11. Developing of new farming machines
12. Finding ways of reducing crop losses e.g. through preservation

All the information from the research centres reaches the farmers through extension agents.

Ways through which extension workers disseminate or pass on the information from research centres to the farmers.

1. Use of demonstrations
2. Group talks
3. Meetings
4. Film shows
5. Personal contact
6. Radios
7. Televisions
8. Outdoor posters

Examples of research stations in Uganda

1. Namulonge
2. Kawanda
3. Kabanyolo
4. Serere
5. Namalere agricultural research station for agricultural mechanization
6. Entebbe animal breeding centre

CHOICE AND COMBINATION OF FARM ENTERPRISES

In choosing combination of farm enterprises the following factors are considered

1. Weather and climate; favourable temperature and adequate rainfall encourage growing of crops for human consumption and pastures for livestock rearing.
2. Soil factors; the soil should be fertile in order to support farming.
3. Topography; this is considered while constructing buildings e.g. poultry unit, farm stores etc.
4. Pests and diseases; crops which are highly attacked by pests and diseases are less productive hence farmers ignore them when choosing crops to grow.
5. Producer objectives; business orientated farmers grow crops and rear those animals which are highly profitable.
6. Market; many farmers' choice enterprises whose products are on high demand.
7. Price; farmers will grow crops that attract high prices in the market.

8. Social factors; some communities take up production of certain enterprises because of their cultural background e.g. the Bahima and Karamajong are basically cattle keepers
9. Religious factors; some religious beliefs may prevent some farmers from engaging in certain enterprises e.g. a community of Muslims may not take up pig rearing.
10. Government policy; the government may discourage farmers from engaging in certain enterprises e.g. marijuana growing.
11. Availability of labour/labour intensity; farmers take up those enterprises whose labour requirements are affordable to them.
12. Availability of inputs/seeds/fertilizers/chemicals; farmers tend to engage in enterprises where they can easily get the required in puts.
13. The level of technology or skill required; farmers will always engage in enterprises where they have the required skills and expertise.
14. Size of the land; farmers will take up only those enterprises which can be accommodated in the size of the land they have.
15. The gestation period of the enterprise; enterprises with a short production period are preferred to those with long gestation period.
16. Availability of capital; farmers invest in those enterprises which are within their capital range.