AGRICULTURE ECONOMICS HAND OUT

Agriculture economics;

This is the study of how best to produce crops and animals to get maximum returns while using scarce resources. The resources needed in production are land, labour, capital, time and management.

Production

It's the creation of goods and services in order to satisfy man's needs.

Factors of production

This is an aggregate of free gifts of nature, human capacity and all sorts of man made aids that help in production. The factors of production include**; land, labour, capital, time and entrepreneurship/ management.**

LAND

Anything provided by nature under or over the earth's surface. Land can lead to development in several ways:-

1. Its where farm buildings are constructed.
2. It's a source of minerals used in manufacture of farm tools
3. It provides soil used in agriculture for crop growing
4. It can provide fuel in form of fire wood.
5. It's a source of all raw materials used in production
6. It can be taxed to provide revenue for the government
7. It can be mortgaged for loans.

Land tenure

These are rules and conditions governing the ownership and use of land in a specific area.

Forms of land tenure

1. Private ownership / free hold/ land lordship/ individual ownership.
2. State ownership
3. Communal ownership
4. Lease hold
5. Co-operative land tenure.

Private land ownership

This is where an individual puts a claim on a piece of land as his personal property by getting a title deed after registering it with government.

Advantages

1. Land owner can mortgage the land for a loan since he has a title deed.
2. The owner can use the land the way he likes for development.
3. Land consolidation and planning becomes easy since what is owned by the farmer is known including the value.

4. It avoids land disputes since the land is well demarcated.
5. It acts as an incentive to farmers to improve the land since they have security of tenure.
6. The land owner can sell the land or part of it easily incase of financial constraints.
7. It safeguards against the position of the local community if land is in short supply.

Disadvantages

1. Tenants can easily be made landless when the owner sells the land in their absence.
2. It encourages Hoarding of land incase of absentee land lord.
3. It may lead to political upraising against land lords who have tough rules on land usage.

State ownership

This is where land owned by the state on behalf of the citizens. People can be evicted from the land anytime without compensation when government wants to use the land.

Advantages:

1. It allows fast decision making in the use of land by the state.
2. It encourages large investments on land by government like plantations, factories etc.
3. Government can rent out land to raise revenue for development

Disadvantages

1. People have no security over the land occupied since they can be evicted any time.
2. Government can fail to utilize the land efficiently by awarding it to political allies.
3. It can be a source of political un-rest when people are sent away from government land.

Communal ownership

This is where land is owned by the community that can be a tribe, clan or religious sect.

Characteristics of communal land ownership

1. Its common in the pastoral communities of East Africa
2. Land is neither bought nor sold.
3. Every member of the community has a right to use land
4. Land is allocated to individuals by community leaders or village elders.

Advantages

1. Every member of the community has access to land irrespective of his social and economic background.
2. There is efficient use of land since abandoned land can be given to members of the community.
3. Each person can cultivate or graze on the communal land with no restriction.
4. There are no cases of landlessness.

Disadvantages

1. It doesn't give any incentives for improvement of land by the farmer.
2. There is a tendency of over stocking and over grazing leading to erosion.
3. Its difficult for a farmer to use the land to get a loan since he has no title deed as an individual.

4. Increasing population leads to land fragmentation which reduces agriculture production.
5. Continuous cropping may lead to destruction of soil structure.
6. Its difficult to improve livestock since controlled breeding is hard to practice on such land due to communal grazing.
7. Pest and disease control is very difficult since farmers are difficult to mobilize under such a system.

Lease hold

Here land is given to the tenant by the state or the landlord for a specific period of time like 49years, 99 years and 999years.

Advantages

1. The tenant has security of tenure therefore can use land for development without fear
2. The tenant can use the title secured to acquire a loan for development.
3. The tenant can rent out the land to get extra income.
4. It minimizes land disputes because of proper land demarcation
5. It encourages the growing of perennial crops with a long lease period.
6. The tenant is encouraged to carryout land conservation measures.

.**Co-operative land tenure**

This is where land is owned by individuals who organize themselves into a Co-operative.

Advantages

1. The land is used efficiently for productive purposes.
2. The co-operative organization can use the land as security to acquire a loan
3. Group ownership of land is a source of security.
4. There is collective work on the land which leads to high production.
5. Members can share profits and losses that are made.

Disadvantages

1. Individuals cannot easily get loans for production
2. Decision making is difficult as far as usage of land is concerned.

LAND REFORMS

This is an organized action designed to improve the structure of land tenure and use.

Examples of land reforms

1. Land consolidation
2. Land registration
3. Land re-distribution
4. Settlement and resettlement schemes.

Objectives of land reform

1. Achieving high levels of land output through security, incentives and investments.
2. Achieving flexibility of farming patterns to meet changing natural market demand.
3. Increasing productivity of both land and labour.
4. Achieving effective utilization of national land resources which can include settlement of people on un used land and introduction of irrigation.
5. Encouraging production for the market through large scale production as opposed to subsistence
6. Encouraging conservation and improvement of land by preserving forests and wetlands.
7. Reducing land conflicts in a population through land registration

Settlement and resettlement schemes

Settlement; first time establishment on land which was previously undeveloped

Resettlement; planned and controlled population transfer from one area to another

Reasons for setting up

1. To ease population pressure by removing people from highly populated places to those with sparse population.
2. To prevent pest and disease attack by removing people from places infested with tsetse flies.
3. Increase land for agricultural production by removing less productive people from the land.
4. To facilitate mechanization by availing more land to farmers.
5. To settle the land less people who may become a problem within the population.
6. To resettle displaced people who might have been displaced by natural calamities and political insurgencies.
7. To encourage self employment to people after being given land.
8. To resettle unemployed people so as to reduce rural-urban migration and unemployment.
9. To carryout research in agriculture activities in resettlement schemes.
10. Train youth in improved methods of farming so as to improve their welfare.

Land registration

This is where a farmer comes to an agreement with government over the ownership and use of land through the acquisition of land title deed.

Importance:

1. The land owner has security of tenure hence can develop the land.
2. He can use the land title as security to obtain loans.
3. Land owner can easily rent out land to get extra income.
4. It minimizes land disputes because of proper land demarcation
5. It encourages land development through establishment of perennial crops
6. Land owner is encouraged to carryout soil conservation measures in order to protect his land.
7. It is easy to sale or transfer the ownership of land.

Land consolidation

This is the pooling of small pieces of land to form a large and more productive land when put together under one management.

Steps in land consolidation

1. Establish land ownership
2. Measurement of the plot to be consolidated in order to establish their size.
3. Describing the nature of the fragment
4. Valuing the fragments to be consolidated
5. Recording each fragment of land for further consideration
6. Issuing of the title for the consolidated land or fragments.

Advantages

1. Saves time that could have been wasted moving from plot to plot during farm operations.
2. Makes supervision of farm operations easy and less costly since they are in one place.
3. It encourages mechanization on a farm since the land is big enough which makes the practice economical.
4. Agricultural production is increased due to large scale production.
5. It's easier to provide extension services on the consolidated land.
6. Theft of farm produce is reduced due to improved supervision.
7. Transport costs of the produce from the garden are reduced since all products are in one place.
8. It's easier to control pests and diseases on the farm since the big portion of land is under one management.
9. It's easier to carry out soil and water conservation measures.

Disadvantages

1. It may make people land less.
2. It may cause political unrest among the population as people lose land during consolidation
3. It's a very costly exercise since each fragment is of a different value.

LAND FRAGMENTATION

This is where agricultural farm land is split into small plots in different places belonging to one farmer.

Causes of land fragmentation

1. An increasing population in the country making land to be scarce
2. Traditional system of land inheritance where sons share the fathers' land upon his death.
3. Limited income among the farmers which forces them to buy small affordable plots.
4. Farming systems like shifting cultivation which allows farmers to move from place to place.
5. polygamy which forces the family head to own pieces of land in different places
6. communal land ownership where people divide up land continuously amongst them selves

Effects of land fragmentation

1. It's difficult to supervise all plots effectively leading to loss of produce.
2. A lot of time is wasted in moving from plot to plot.
3. Farm planning is difficult due to the small size of the fragments.
4. It encourages low agriculture production due to subsistence production.
5. Theft of farm produce is common due to reduced supervision.
6. Agricultural mechanization is difficult due to the small size of the plots which are scattered.
7. It's difficult to offer agricultural extension services on such scattered plots.
8. It's difficult to carry out soil conservation measures due to the distance involved.
9. Pest and disease control on the fragments is difficult.
10. It's difficult to control grazing since farmers have small plots that are prone to overstocking and overgrazing.

Mention ways of land acquisition in Uganda

CAPITAL

It's a stock of assets which are meant for the production of other assets.

Types of capital

1. Fixed capital / Real capital

This includes land, building, fences, and machines, Tools, livestock and crops in the garden. Fixed capital stays in the business for a long time

2. Working capital

This is money or materials used in day to day running of the farm business e.g. fertilizers, fuel, seed etc.

3. Private capital These are assets owned by individuals

4. Social capital These are assets that are owned by the state on behalf of the citizens e.g. roads, schools, hospitals, government farms etc.

AGRICULTURE CREDIT

This is money or resources which farmers borrow from various institutions or individuals to improve their production and development.

Importance of agriculture credit.

1. It allows farmers to finance profitable activities on the farm.
2. It encourages the farmer to develop a sense of saving.
3. It increases capital development on the farm in form of buildings, fences etc.
4. It allows a farmer to finance big investments beyond his income.
5. It encourages better farming techniques in agriculture through the use of improved breeds and varieties
6. It can lead to improvement of the standard of living amongst farmers.

Sources of agriculture credit.

1. Commercial banks like stanbic, DFCU
2. Co-operative organizations like BCU
3. Individual money lenders like baypot.
4. Farmers organizations i.e. Uganda National Farmers Federation (UNAFF)
5. International bodies like International Fund for Agriculture Development, Food and Agriculture Organization, International Monitory fund.
6. Development banks like UDB, EADB.
7. Marketing board e.g. Uganda Tea Board
8. Government through various bodies like central bank

MEASURES THAT ENSURE EFFECTIVENESS OF AGRICULTURE CREDIT

1. Provision of extension services / education to farmers on how to use loans.
2. Improvement of loan supervision to ensure prompt payment.
3. Improving loan recovery programme by encouraging part repayment over a period of time.
4. Improving staff training for effective co-ordination with farmers.
5. Provide farmers with inputs at fair prices so that they can earn profits for easy repayment of the loans.
6. Provide farmers with loans in kind like fertilizers, pesticides, improved seeds etc.
7. Organize marketing of farmers' produce at fair prices so that farmers can get profit early to pay back credit.
8. Give loans to farmers in time or at the correct time to reduce risks.
9. Give adequate grace period to allow loan payment to take place easily.
10. Charge fair interest rates that can be met by the farmers.
11. Help farmers to identify viable projects for investment.

PROBLEMS ASSOCIATED WITH LOAN REPAYMENT

1. High interest rates which may be difficult to be met by a farmer to pay during loan repayment.
2. Short grace period which doesn't allow the farmer to realize the borrowed money.
3. Risks and uncertainties that cause severe losses to farmers making it hard to pay back loans.
4. Poor loan supervision among the loan providers giving room for defection.
5. Credit unworthiness of some farmers who may not want to pay back the loan.
6. Death of the farmer leaving no body to pay back the loan.
7. Political interference where a farmer may take the loan advanced to be a political payment or reward.
8. Inadequate knowledge of a farmer on how to use loans effectively

Types of agricultural credit

Short term credit- this given for a period of 1 to 2 years and can be used to purchase inputs like fertilizers, seeds, pesticides feeds and employing casual labour

Medium term credit- this is give for a period of 2-5 years and can be used for building farm structures and purchasing machinery

Long term credit- this can be given for a period of 20 years and can be used for financing long term projects like purchase of livestock and erecting buildings

LABOUR

This is human effort both manual and intellectual directed towards the process of production.

Classification of labour

Labour can be classified as;

a) Skilled labour.

This is where people perform jobs in which they have training e.g. teachers teaching and doctors treating

b) Semiskilled.

This is where a person performs a particular job where he has no training but has some knowledge about it.

c) Unskilled labour This is labour provided by people who are not trained at all in such a field.

d) Family labour

This is labour provided by family members like children and wives in agriculture work.

Efficiency of labour

This is the measure of output per person per hour / time

It's affected by

1. Education / training ease ways of doing work.
2. Health; poor health reduces labour efficiency
3. Incentives i.e. attractions to work e.g. salary.
4. Climatic conditions; poor climate reduces efficiency of labour
5. Supervision; poor supervision reduces efficiency
6. Organizations of people for work; poor organization reduces efficiency
7 Experience of the workers; low experience reduces efficiency
8 Provision of good tools for work; lack of tools for use during work reduces efficiency

LABOUR FORCE

This refers to economically active people between 15-65yrs of age excluding students, house wives and disabled.

Labour supply.

This is the number of hours worked per period of time.

Factors affecting labour supply.

1. Health conditions of the workers.
2. Motivation in terms of salaries and allowances.
3. Working conditions.
4. Population size a high population leads to provision of more Labour e.g. china
5. Retirement age, a high retirement age guarantees a high labour supply.

6. Immigration which increases labour supply
7 Emigration which decreases labour supply as workers leave a place
8. Labour mobility, a high labour mobility leads to high labour supply.
9. Working time, as number of working time increases supply of labour also increases.
10. Strength of trade unions. These can reduce the number of people employed to maintain the wage by fixing a high minimum wage.

Labour mobility

This is the ease with which labour can move from one place to another (geographical mobility) or from one job to another (occupation mobility)

Factors affecting labour mobility

1. **Limitations in skills**; it's hard for a sweeper to do doctors work.
2. **Time required for training**; along training period reduces the rate at which such people can join that occupation.
3. **Racial differences**; in some countries certain jobs are reserved for a particular race.
4. **Trade unions**; workers can we collective effort to bargain for higher wages and reduce entry of others in employment.
5. **Transport**; poor transport resists movement of people from place to place.
6. **Security**; poor security can affect the acquisition of jobs in particular areas.

MANAGEMENT / ENTREPRENEURSHIP

An entrepreneur is a person who undertakes the task and risk of organizing other factors of production so as to earn profits. The reward for the entrepreneur is profit or loss depending on performance of the business.

Management; the art and science of organizing and operating a farm business or this is the organization of factors of production by minimizing costs and maximizing profit.

Functions of a manager

1. Purchasing farm inputs
2. Mobilizing resources for the farm
3. Combining factors of production to earn profits
4. Bearing risks and uncertainties of the farm
5. Organizing and supervising factor inputs like labour
6. Making final decision in the farm business to foster growth
7. To event new ideas that are useful for development
8. To find market for farm produce and sale it
9. Keep up-to-date farm records for reference purposes
10. To motivate labour at the farm for better performance
11. To coordinate and plan farm activities as required

Factors that determine the farmers' choice of an enterprise

i. Climate; good climate favours crop and animal production more especially where farmers have to depend on nature

ii. Soil factors; in agriculture, good soils are necessary for crop production
iii. Pests and diseases; their presence limits agriculture since they attack crops and animals leading to losses
iv. Farmer's interests; this influences their zeal for work of a particular nature and level of production
v. Market; whatever farmers produce must be taken to the market for sale. Good market encourages farmers to venture in an enterprise
vi. Social and religious factor; Moslem cannot invest in pig enterprise since their religion bars them from that practice.
vii. Government policy; government can prohibit some enterprise which may discourage farmers from such work e.g. production of tobacco.
viii. farmers' experience and skill in an enterprise
ix. level of capital needed in investment
x. availability of power needed in production

Production efficiency-this is the measure of the farmer's ability to use low costs to obtain maximum output in quality and quantity.

Efficiency standard-this is a mathematical formulae that a farmer uses to assess his success or failure in business

Types of efficiency standards

Partial efficiency standards – it's a measure of the efficiency of carrying out a particular farm enterprise. It can be carried out in two ways

a) **Yield index – the percentage ratio of actual yield to expected yield i.e yield index = $\frac{\text{actual yield}}{\text{Expected yield}} \times 100$**
b) **System index – the percentage yield index between two different farms under comparison**

Economic efficiency-measure of the economic contribution of each factor used in p[production with an aim of establishing maximum average output per unit input.

Technical efficiency-this measures the ability of a factor of production to perform its job properly within the required time to contribute effectively to economic returns of a business.

Improving farm efficiency

- proper weed control
- proper pest and disease control
- use of improved breeds and varieties
- mechanization of farm activities
- careful planning
- proper crop spacing
- use of manures and fertilizers
- early planting
- supplementary feeding of livestock
- proper record management

Farm planning and budgeting

Farm planning is the designing of a careful arrangement through setting objectives and defining means and procedure of achieving the objectives set.

Process of decision making

Problem recognition
Collection of information
Analyzing alternatives

Making a decision
Taking action

Forms of planning

1) Simple planning- this involves budgeting for cash received and expenses while ignoring minor expenses
2) Intermediate planning-this is full budgeting for input-output ,receipts ,investments and credits
3) Advanced planning-involves intermediate planning, budgeting for receipts, expenditure, borrowing and repayment on an annual basis
4) Informal planning-these are plans mentally borne without anything written
5) Partial planning- this is where a section of the farm is planned leaving the other part

Importance of farm planning

a. A farmer can set targets of how much produce he expects to get
b. Enables allocation of scarce resources in relation to costs and markets
c. Allows the farmer to fully control the farm other than being controlled
d. Guides the farmer in choosing the enterprise to maximize profits
e. Enables a farmer to separate items for sale, saving and domestic use
f. Enables the farmer to assess the progress of the farm towards the set goals
g. Allows the farmer to focus ahead to see the future of the farm
h. Allows the farmer to perfume farm duties on time
i. Allows a farmer to identify reasons for his success

Aims of planning

i. To achieve maximum revenue returns
ii. Identify least cost combinations
iii. Determine nature of weakness in the use of resources
iv. Indicate the most profitable combination

Methods of planning

1. Comparison between different farms
2. Budgeting using elementary economics
3. Linear programming using computers

Methods of increasing profits in Agriculture

1. choosing correct business with less risks and uncertainties
2. Selling produce when prices are high i.e. having good storage facilities
3. Timely planting of crops so as to benefit from the high prices that are offered at the beginning of the harvesting season.
4. Use of better techniques of production i.e. improved seeds, good breeds.
5. Processing agriculture products so as to add value hence more profits.
6. Advertising your produce so that buyers are aware
7. Grading the produce to allow fair prices for each product.
8. Packing of the produce so as to reduce transport costs and increase the profit margin.
9. Proper control of pests and diseases i.e. increase quality.
10. Proper allocation of resources to avoid over spending and under spending.

Economics basic principles

These explain fundamental economic problems of man and they are;

Scarcity – this means that all commodities are relatively less than people's desires for them

- Scarce goods are called economic goods
- Abundant goods are called free goods

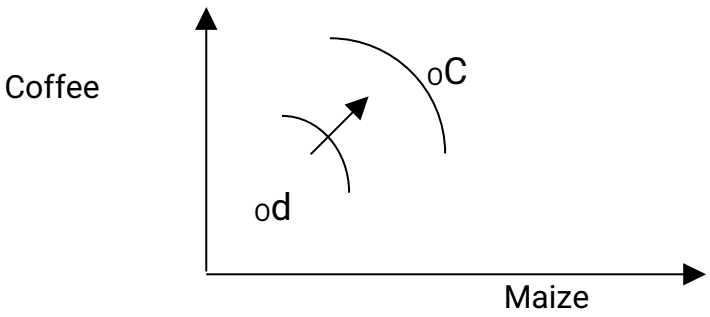
Choice -Taking of the right decision.

Opportunity cost; It's the value of the alternative foregone in making a decision e.g. if you forego buying a car and build a house. The cost of the car is the opportunity cost.

Opportunity cost, curve / production possibility.

- It's a locus of points showing the combinations of commodities that may be produced when all resources are fully utilized..

- **Economic growth**
  This is the shift of the production possibility frontier curve outwards (to right)



It shows an increase in resource and hence an increase in commodities produced.

Economic system

This refers to the organization of ownership, allocation and distribution of resources in an economy.

- **Free enterprise economy** (unplanned / competitive / capitalization) 'Laissez faire" leave us alone (French) – All resources are owned by private individuals who are free to take all decisions.
- **Centrally planned economy / planned / command economy / socialism**. All resources are owned by the state on behalf of the citizens. The extreme of socialism is communism
- **Mixed economy; It's** where some resources are owned by government and others by individuals.

NB: In practice, there is no pure capitalization or socialism

.

PRICE THEORY

Market An arrangement in which buyers and sellers negotiate the exchange of a well defined commodity

TYPES OF MARKET

a. **Competitive market**- This is a market where there is perfect competition i.e. many sellers, free entry and exit, perfect knowledge, Non government regulation, profit and utility maximization.
b. **Imperfect market** -There is limited competitions in this market.
c. **Commodity market** -where goods and services are traded
d. **Factor market -**where factors of production are traded.
e. **Controlled market** Where authorities exert a degree of control e.g. by fixing prices, setting quotas, etc.
f. **Spot market** It's where the commodity or a currency is traded for immediate delivery.
g. **Future market** Where contracts for delivery at some future date are traded.

DETERMINATION OF PRICES IN MARKET

- **Haggling**
  It refers to the bargaining process taking place between one buyer and one seller. The process of bargaining continues until the buyer and the seller agree on the same price.
- **Fixing by treaties**
  Here buyers and sellers come together to fix the price of a commodity. The price can be revised by amending the treaty.
- **Sales auction**
  Takes place between one seller and many buyers where buyer competes for the commodity by fixing high prices. Commodity is taken by one who pays the highest price.

- **Forces of demand and supply.** These two act to form an equilibrium or market price
- **Retail price maintenance;** here manufacturers provide retail recommended price inscribe on the commodities
- **Fixing prices by government;** here a maximum price is set by the government to reduce exploitation of the sellers and buyers
- **Contract agreement;** here a supplier agrees with the consumer on the price before commencement of the business
- **cartel;** producers agree on the price of their product

Equilibrium Price

In the process of buying and selling (demand and supply) there comes a time when quantity supplied is equal to quantity demanded i.e. demand = supply. Such a price is called the equilibrium price **e.g.**

Price(shs)	Demand (Kg)	Supply (Kg)
200	12	4
300	10	6
400	**08**	**08**
500	06	10
600	04	12

DETERMINATION OF PRICE USING DEMAND AND SUPPLY

i. In a competitive market, prices are determined by price mechanism i.e. forces of demand and supply
ii. If supply increases (excess supply) at constant demand, price falls
iii. Increase in demand at constant supply will lead to increase in prices
iv. At equilibrium, demand is equal to supply
v. At low prices, demand is high and supply is low
vi. When equilibrium price is stable for some time, it is called the normal price or natural price.
vii. Equilibrium price is the market price where what is brought to market is bought without leaving excess.
viii. Excess demand implies a shortage of supply/ low supply

DEMAND

The desire backed by the ability and willingness to have the commodity desired.

Effective demand - it's the actual buying of the commodity.
Quantity demanded - This refers to the amount of a commodity buyers are willing and able to purchase in the market at various prices for period of time
Demand schedule -Data expressing the quantity of goods buyers are willing to buy at various prices.

Demand for maize flour in Naalya market

Price (shs)	Quantity (Kg) demanded
1000	20
900	40
800	60
700	80
600	100
500	140

Demand Curve

Law of demand
The law of demand states that the higher the price, the lower the quantity demanded and vice versa. **Cateris paribus (Keeping other factors constant)**

Factors influencing market demand for agriculture products

- **Price;** When the price falls, consumers buy more because they leave substitutes and buy more of the cheaper commodity i.e. more consumers join market to buy cheap commodity.
- **Price of other commodities** e.g. substitutes and complements.
  a) Substitutes are two commodities that can be used to satisfy the same demand e.g. Beans and peas – increase in price for beans will lead to low demand for bean and high demand for peas supposing their price is constant.
  b) Complementary Commodities are jointly demanded e.g. petrol and cars, shoe polish and shoes. Increase in demand for cars will lead to an increase in demand for petrol.
- **Incomes** - consumers with higher income buy more than the poor hence command a high demand
- **Size of population;** Increase in population increases demand for commodities more especially necessities.
- **Population composition in terms of age and sex**; A population full of aged people is less productive hence has a low purchasing power and demand
- **Tastes and preferences** ;If people lose taste for one commodity in preference for another then demand for such commodity will be low.
- **Future expectation**; when prices are expected to rise in future due to anticipated shortage, buyers will buy more and stock increasing demand at that time.
- **Change in savings**; a family wishing to increase savings will reduce consumption expenditure lowering demand.
- **Advertisement**; Increasing advertisement will increase the awareness of such a commodity hence increased demand.
- **Taxation**; increased taxes on goods by government increases the prices hence reduced demand.
- **Inflation** ;A lot of money in circulation increases the demand as there is a lot of money to spend yet the commodities are limited.
- **Depreciation** Depreciated goods are not on high demand e.g. old hoes are not highly demanded since cannot do the best job.
- **Taboos** Some communities and religions forbid consumption of certain items e.g. pork by Moslems and Seventh Day Adventist. this lowers demand for such items in the community
- **State of the economy; A** booming economy will experience a high demand for commodities as people have money to spend.

Types of demand

Joint / complementary demand. Demand for commodities that are used together such that increase in demand for one increases demand for the other e.g. demand for fuel and cars

Competitive demand This refers to the demand for commodities which serve almost the same purpose such increase in demand for one reduces the demand for another e.g. block and bricks, beans and peas , coffee and tea.

Composite Demand Demand for a commodity which serves several uses such that its total demand is got by adding up quality demanded of it by those several uses.

Derived demand

This refers to demand for a commodity not for its own sake but as a result of demand for another e.g. demand for factors of production is derived from demand for commodities which

such factors of production are used to make.

Independent demand
Demand for a commodity does not affect the demand for other commodities

PRODUCT COMBINATION
Competitive products; products that compete for the same resource during production like crops and livestock using the same land. Increase in area of crop cultivation will reduce grazing land available for livestock production hence less animals produced.
Joint products; products produced from a single line of production like meat and hides or skins. Increase in meat production increases supply of hides or skins
Complementary products; products that support each other in the line of production like pasture legumes and grasses, livestock and crops in mixed farming
Supplementary products; two products that have no effect on the output of the other like keeping dairy cattle and pigs in the court yard

INPUT COMBINATIONS
Diminishing rate of substitution; two inputs substitute each other as one may be used more than the other to effect the same change
Varying rate of substitution; two inputs can form a combination to give the best results once mixed in different ratios

.
Elasticity of Demand
This refers to the degree of responsiveness of change in quantity demanded to a change in factors which influence quantity demanded like price , income and price of other commodities.
Price elasticity of demand -this is the measure of responsiveness of change in quantity demanded to changes in the commodity's own price.

$$ED = \frac{\%\ \Delta \text{Quantity demanded}}{\%\ \Delta \text{Price}}$$

E.g. when the price of maize was100shs/kg, quantity demanded was 1000kg when the price was increased to 200shs / Kg quality demanded was 400kg.

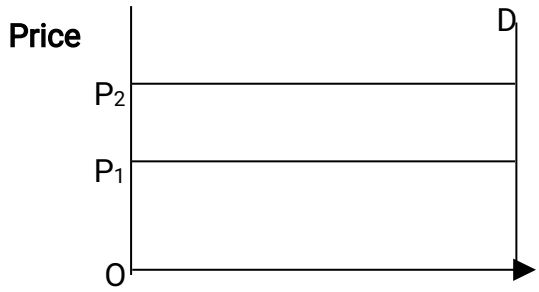
$$ED = \%\ \Delta \text{ in demand} \quad \frac{1000 - 400}{1000} \times 100\% \ \frac{600}{10} = 60$$

$$\%\ \Delta \text{ Price} = \frac{200 - 100}{100} \times 100 = 100$$

$$ED = \frac{60}{100} = 0.6$$

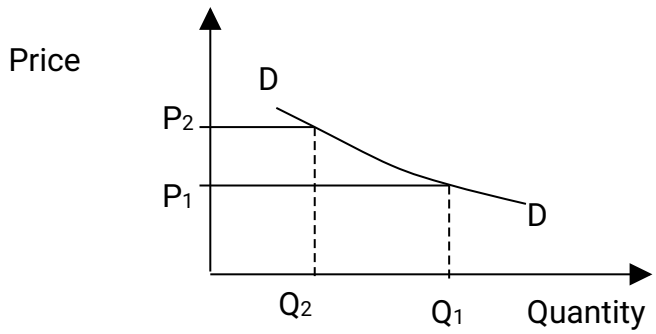
Interpretation of price elasticity of demand

- ***Perfectly or completely inelastic*** – when price Ed is zero. Quantity demanded does not respond to changes in price at all.
-



- ***Inelastic demand*** Ed is greater than zero but less than 1 – smaller change in quantity demand resulting from a change of price .

- ***Elastic demand*** Ed is greater than 1 but less than infinity. Here % change in quantity is greater than change in price.



Unit elasticity of demand

This is when price elasticity of demand is equal to one i.e. quantity demanded changes exactly as price change.

Perfectly elastic; When price elasticity is equal to infinity meaning that buyers are prepared to buy all they can at below the same price and not at all slightly higher

Determinants of price elasticity of demand

- Availability of substitutes
  Commodity with many substitutes has elastic demand since consumers shift from it when cost is increased.
- Degree of necessity Price tends to be inelastic since they indispensable e.g. when the price of salt increases the quantity demanded is the same. Luxuries have elastic demand.
- Consumers income
  When consumers are of low income (poor) Ed. Tends to be elastic as price increase it reduces their demand since they cannot afford.
- Cost of the commodityIf a commodity takes a small fraction of the consumer's income, its demand tends to be price inelastic e.g. match box, salt.
- Habit in use of the commodity This makes the demand to be inelastic e.g. Demand for alcohol and cigarettes, drugs may not be affected easily by change in price for the addicts.
- Durability of the commodity Durable commodities like radios, cars have low price elasticity of demand. Even when price is lowered, one cannot buy one if he / she has one.
- Price expectation
  If prices are expected to increase in future, demand will be inelastic as people would buy and stock and vice versa.
- Several uses of the commodity A commodity with several uses (composite) has elastic demand for example Electricity when price is increased people use less of it.
- Time lag Consumers take time to respond to price changes. Elasticity tends to be Inelastic in the short run and elastic in the long run.
- Time of the year Towards and during public holidays, demands tends to be inelastic since even when the price is increased people still buy more
- Consumers ignorance Consumers may buy commodities a high price when they don't know where such commodities or their substitutes are sold.

SUPPLY THOERY

Quantity supplied -the amount of a commodity producers are willing to bring to the market at various prices per period of time.

SUPPLY SCHEDULE

Price (shs)	Quantity supplied (Kg)
200	50
300	100
400	150
500	200
600	250
800	350

Supply Curve

Law of supply
The higher, the price, the higher the quantity supplied and vice **versa ceteris paribus.**
Determinants of quantity supplied for agricultural products
Price; According to the law of supply, the higher the price, the higher the Quantity supplied.
Weather For agriculture products, good weather with adequate rainfall and a sunny Harvesting period is necessary for high yields and high supply.

Technology of production
Farmers using tractors and other machines in production produce more than those using traditional implements like panga hence higher supply.

Managerial efficiency
A well organized farm enterprise yields more than a poorly organized one since activities are done on time and as required.

Costs of production
If the costs of inputs like fertilizers and seeds are low then it's easy for farmers to buy them and produce more increasing supply.

Number of sellers / producers
If many sellers bring more produce to the market then supply will be high.

Government policy
If the government levies a high tax on a particular good more especially agriculture inputs , then this automatically increases the price of such a good and will reduce supply of agriculture products due to increased costs of production.

Transport
Improved and efficient transport facilities facilitates the delivery of farm produce to the market increasing supply.

Prices of other (substitutes) products,
Increase in the price of one will increase the demand for the product whose price has not been increased

Political stability -

Enough security will encourage production hence increasing supply of products to the market.

Aims of producers

If a producer's objective is to produce large quantities of a product for the market then this will increase production.

Future price expectation

If the prices are expected to increase in future, suppliers will hoard / store the product for the future good prices reducing supply.

Availability of factors of production

When the prices for labour, land and capital are low then it becomes more profitable to produce more for the market increasing supply.

Demand

High demand for any commodity calls for increased production and supply as well and low demand calls for low supply.

Gestation period

This refers to the period of maturity. If the gestation period of a commodity is short the production / supply can be increased in the shortest time possible.

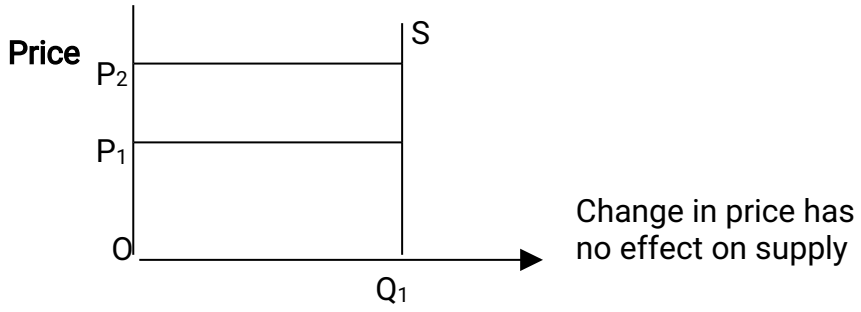
ELASTICITY OF SUPPLY (ES)

Price ES – is the measure of responsiveness of changes in the quantity supplied due to relative changes in price of the good.

$$ES = \frac{\%\ \Delta \text{ in quality}}{\%\ \Delta \text{ in price}}$$

Types of E_S

Perfectly / completely inelastic - Elasticity of supply is = 0 (zero)



Inelastic

ES is greater than Zero but less than one (1) i.e. %age change in Price is greater than %age changes in quality supplied.

Unit elasticity of supply
This is when ES is equal to 1. Percentage change in quantity is equal to percentage change in price.

Perfectly elastic
When at or above a curtain price suppliers supply all they can but nothing below that price

Elastic supply
Elasticity of supply is greater than 1 but less than infinity.i.e.Percentage change in quantity is greater than percentage change in price

Factors influencing price elasticity of supply

Nature of product
Durable commodities have high Es since they can be stored for a long time as compared to perishables.

Gestation period
When a commodity has a short gestation period its elasticity of supply is higher than that with a long gestations period since take a short period to change.

Time
In a short time the Es of supply is small but can be big in the long run. For instance it takes some time for suppliers to get used to the new price after a change.

Method of production (technology)

Products produced with sample technology have a high elasticity of supply because they can easily be produced when the price increases.

Government policy

Elasticity of supply may be low when government restricts importation of certain commodities.

Ease of entry of new firms in the market

When new firms are restricted from entering the market supply is likely to be inelastic /low.

Price expectations

When producers expect prices to change, the price E_S will be low until they are fully sure of the new price.

Factor mobility

When factors of production are easily reallocated from one line of production to another, elasticity of supply is high and vice versa.

Characteristics of agricultural products

i. They are perishable
ii. They are bulky
iii. They are seasonal in production
iv. They have inelastic demand
v. They have synthetic substitutes
vi. They are of mixed quality
vii. They have a long gestation period

Problems of marketing Agriculture products

a. Divergence of production; it's difficult to plan exactly what to produce and get the same quantity due to the many risks an uncertainties involved.
b. Inelastic demand ; agriculture products have inelastic demand since even when prices are lowered the demand doesn't change distinctly.
c. Perishability - most agriculture products are perishable therefore difficult to store hence need exposure very fast.
d. Availability of synthetic substitutes; this has replaced a number of products like sisal, cotton rubber
e. Seasonality of production –;products like crops have specific periods in which they are production therefore scarce at planting and abundant at harvesting
f. Bulkiness agricultural products weigh much in relation to their value. This makes the transportation of such products more difficult and costly.
g. Mixed quality; agriculture products are always a mixture which calls for sorting
h. Price fluctuation; this affects farmers income more especially where prices reduce
i. High taxation; this reduces the profit margin for the farmers
j. Long gestation; this make change in supply at short notice difficult
k. Poor roads; this makes transportation of produce to the market difficult and costly.

l. Large number of small scale produce; these make control of production difficult hence farmer cannot get better prices
m. Insecurity; this will impede movement of products to the market due to fear for robbery and destruction of property.

MARKETING AGENCIES, INSTITUTIONS AND ORGANIZATIONS.

These are bodies involved in one or more marketing functions

a. Itinerant traders- These move from place to place buying agriculture produce of various types from farmers.
b. Processors- these are individuals or organizations who undertake the task of processing agriculture product into a usable form to satisfy consumers.
c. Wholesalers- these buy in bulk from manufacturers and sell to small sellers (retailers).
d. Retailers- these buy from wholesalers and rarely from producers selling to consumers.
e. Brokers- these bring the sellers and buyers together without the broker handling the actual good
f. Commission agents- they receive goods and sell them on behalf of their principles for a cost (commission).
g. Cooperatives.
h. Marketing boards.

Marketing functions.

These are essential and recognizable activities which are performed in the marketing process .

They include the following;-

1. Buying-this involves purchasing in small amounts for producers and bulking up the commodity.
2. Assembling- this is where commodities are pooled up into large quantities ready for the next operations.
3. Transport- it's the movement of goods from the place of production to the centers of consumption or demand.
4. Selling- this is the presentation of the commodity in an acceptable and attractive manner.
5. Storage-it involves storing products to reduce loss in value as most of the agriculture products are perishable.
6. Processing- it's the changing of the products from raw form to a more acceptable form to increase value.
7. Grading- it's the sorting up of products in a uniform way especially quality wise.
8. Standardization- measurements are applied more especially quantitatively for easy pricing.
9. Financing- the process of turning raw materials into finished goods requires money resource to finance it.
10. Risk bearing- in between buying and selling, a number of risks are encountered like theft, fire, e.t.c.
11. Collecting and analyzing market information- efficient marketing depends on the availability of market information like prices, taxes, risks, e.t.c.

Importance of processing agricultural produce

- adds value to produce hence good prices at selling
- increases the shelf life of produce/reduces perishability
- increases the number of products from a single item hence profit margin
- makes an item more suitable for consumption/improves quality of products
- reduces the bulkiness of items making transportation and packing easy

- creates avenues for increased youth employment in processing units

Importance of grading

- makes pricing of products easy and reasonable
- makes distribution of products more effective
- proper grading increases profit making
- it minimizes spoilage of produce by separating the spoilt produce out
- facilitates buying and selling due to reduced inspection

Importance of packaging

- it reduces bulkiness of produce
- reduces adulteration of produce
- controls spoilage of produce from the environmental factors
- makes handling of produce easy
- may assist in advertisement of produce
- may aid branding of produce

Importance of prices in Agriculture

1. They indicate to the farmer what commodity to produce.
2. Prices determine the level of output.
3. They act as a guide to economic activity and allocation of scarce resources.
4. Prices allocate the workers to the right jobs where they are most efficient.
5. Prices coordinate consumption levels of agricultural produce through forces of demand and supply.
6. Prices reward the factors of production and leave freedom of choice among producers and consumers.
7. They enhance better and efficient methods of production more especially when prices of a certain commodity increase.

CAUSES OF PRICE FLACTUATION IN AGRICULTURE

a. Risks and uncertainties; these are cardinal bottle necks in agriculture since they greatly affect the quality and quantity of production on farms
b. Climate; the production of crop and animals is affected by rainfall, temperature
c. Most agriculture products are perishable and therefore difficult to store hence must be sold soon after harvesting.
d. Agriculture products; have inelastic demand so that excess production is difficult to absorb while maintaining price.
e. There is divergence between planned and actual output which at times is less than planned and at times, more than planned.
f. Seasonality of production more especially crop products that are excess during harvesting period and scarce at planting.
g. Stiff competition from synthetics like polyethene plastics and other petroleum products for rubber and sisal.
h. Long gestation period ; when prices for the products are high, producers plan to produce more which takes a long time before production is realized.
i. Bulkiness; most agriculture products are bulky which makes transportation difficult from places of plenty to scarcity.
j. Agricultural products form a small part of manufactured production hence the excess

supply cannot be absorbed in the manufacturing industry.

k. Large number of producers ;this makes it very difficult to plan and make actual productions giving room to peasant to sell at any price.
l. Protectionism by developed nations.; It's difficult to export surplus agricultural products to developed countries because of heavy regulations and tariffs imposed on agricultural imports.
m. Low level of industrialization ; Most LDC's don't process their agricultural products to final products which reduces the value of such items.
n. Changing technologies; more technologies are being discovered which use less raw materials like cloth made of polyester and less cotton. This reduces the demand for agriculture products.

EFFECTS OF PRICE FLUCTUATIONS ON FARMERS

- Lead to fluctuations of farmers' incomes and hence low standard of living.
- Revenue for government from agriculture products declines when prices are low affecting the country's development.
- Employment in agricultural sector fluctuates with fluctuating prices.
- Foreign exchange earning for the state fluctuates affecting Balance of payments (B.O.P.)
- Makes planning by governments and farmers difficult because of uncertain future income.
- The county experiences balance of payment problem and unfavorable terms of trade when prices are low.
- Agriculture mechanization becomes difficult because of low income.
- Makes farm budgeting and planning very difficult due to unstable incomes

REDUCING PRICE FLUCTUATIONS

1. **Fixing prices** by government i.e. maximum or minimum price legislation so that the sellers are not exploited over price.
2. **Diversification** which means growing many types of crop and rearing animals which guards against total loss.
3. **Improving storage facilities** more especially for the Perishables so that supply can be regulated to meet demand.
4. **Increase research** so that good quality crops resistant to drought and pests, short gestation period are grown to reduce risks.
5. **Processing of agriculture products** like cotton and coffee before being sold to increase their shelf life and value for higher prices.
6. **Improving technology** in agriculture production through the use of irrigation, fertilization etc. This increases production and reduces scarcity.
7. **International commodity agreements** -these fix quotas and prices for both buyers and sellers of commodities to reduce exploitation.
8. **Improving transport** so that products can be moved to places where there is shortage to control price fluctuations.
9. **Price support** -here farmers sale their commodities at market price and present their receipts for government to top up to a realistic price.
10. **Buffer stocks** -Here the surplus during plenty is bought by marketing boards and sold during scarcity.
11. **Forming farmers'** organizations and commodity agreements to negotiate for better prices.
12. **Barter trade** -this helps in disposing off the surplus, but there are problems of transport.

13. **Fixing quotas** for farmers so that over production is checked that can result into reduced prices.

Question; Show how the cob-web theory can be used in explaining price fluctuation in agriculture

AGRICULTURAL DEVELOPMENT

Agricultural development is the transformation of agriculture from traditional subsistence farming to commercial or business orientated agriculture or **Is the transformation of agriculture** from low productivity to higher productivity i.e. Increasing output per unit input.

Role of Agriculture in development

- Agriculture requires less capital than industrialization and it can be carried out by people of all levels.
- It's a sole source of food for the growing rural and certain population.
- Agriculture requires less skilled labour as compared to industrialization.
- It's a good source of capital for the development of on the sectors in LDCs like industry.
- Agriculture provides market for industrial products like fertilizers, drugs, implements.
- Agriculture provides employment to many people in LDC e.g. 80% of Ugandans are employed directly and indirectly in Agriculture (2002 population census).
- Agriculture products constitutes 85% of export earning for Uganda therefore a good source of foreign exchange.
- It's a source of income for the rural poor used in buying other items.
- It produces raw material for industries like cotton, vanilla, hides, skins etc.
- It provides labour as people will more from rural areas to cities for employment in industries.

LIMITATION OF AGRICULTURE DEVELOPMENT

a. Lack of land both in quality and quantity -as the population increase the quality and quantity of land declines due to exhaustion and land fragmentation.
b. Lack of capital -In Uganda today 38% of the population is below the Poverty line therefore cannot purchase inputs needed in agriculture production.
c. Poor infrastructure -There is problem poor roads which impedes the movement of many products to the market from the places of production.
d. Lack of skilled labour - a defective education system which emphasis theory and does not prepare products to work in rural areas discourages agricultural development.
e. Inadequate extension services - Most farmers do not have enough knowledge as regards to agricultural production since extension services are inadequate.
f. Limited market-information about available market is still lacking and the fact that most rural dwellers are all engaged in agricultural there is no body to buy from others
g. Risks and uncertain - agricultural products have a lot of risks and uncertainties which limit their production leading to a lot of price fluctuation.
h. Poor pricing policies - Farmers are scattered and most of them are subsistence producers. This makes it difficult for such producers to bargain for better prices in the market.
i. Political instabilities -this insecurity has discouraged agricultural production as farmers are always in the run more especially in places with wars.
j. Social factors- some farmers are very conservative and will resist any development put forward by authorities.

POLICY RECOMMENDATION FOR AGRICULTURE DEVELOPMENT.

- **Cooperative development-**government should change her policy on cooperatives so the

development of these bodies can take place as before.

- **Manpower for agriculture development**- training of researchers in agriculture and making the subject compulsory at primary is another step forward that will increase manpower,
- **Land policy**-reforms that agitate for the redistribution of land and correcting land ownership is yet another step forward in developing agriculture.
- **Credit policy**-micro finance organizations should be encouraged to lend money to the peasants even when they have no security.
- **Technology development**-better breed s of both crops and animals should be availed to the farmers to increase their production. Machines should also be used in production.
- **Extension education**-farmer need to be taught about new methods farming and equip them with other necessary skills through education.
- **Development of infrastructure**-better roads and other communication channel are needed more especially in the marketing agriculture products.
- **Marketing and pricing policy**-government should support the prices of agriculture products through subsidizing inputs or price support for the products.
- **Processing of agriculture products**-more investment is needed in setting up agro-processing industries so that the products produced are of a higher value.
- **Taxation policy**-after abolition of taxes on agriculture exports, the government should remove taxes on imported agriculture inputs like fertilizers, pesticides, herbicides, e.t.c.
- **Fund allocation**-government should allocate more funds towards agriculture development in the budget since the sector employs more than 80% of the population.
- **Political stability** this is very crucial in the development of any nation. Place where instability sill looms have lagged behind in development.
- **Transformation of society**-traditions that hinder development should be discarded through compulsory primary education and adult learning.
- **Agriculture research**; this will increase production through the invention of highly productive breeds of animal and crop varieties.

Mention the role played by agriculture research stations in agriculture production.

a. improve existing crop varieties to suit environment
b. develop new breeds of animals and crop varieties
c. testing new technologies of production
d. comparing performance of different varieties and breeds
e. finding the best method of controlling pests and diseases
f. carrying out soil sampling for different fields
g. developing new farming tools and equipment
h. testing and evaluating the performance of chemicals

problems faced by research stations

i. lack of enough qualified research scientists
ii. limited funding to research stations by government
iii. varying soil and climatic conditions in the different regions of Uganda
iv. poor remuneration to researchers forcing many to leave research
v. low numbers of research stations for the whole country
vi. poor infrastructure at research centres making work difficult
vii. ignorance amongst farmers on use of improved technology
viii. changing climatic conditions in the world

FARM MANAGEMENT.

Farm records.-

Farming is business and involves many activities. The farmer must keep concise and clear records so as not to forget the many things done.

Importance of farm records.

1. They clearly show the success of a farmer by revealing the profit and losses made in a specified time.
2. They stipulate the physical performance of the different enterprises on the farm like poultry, piggery, dairy, e.t.c.
3. Records help in decision making regards the future of the farm enterprise.
4. Records can be used as a reference when a farmer wants to get loans from financial institutions
5. They can be a guide in comparing different farm enterprises and performance of farms with in a region.
6. Tax assessment can be done basing on farm records which leads to accurate assessment.
7. With the use of records, the sharing of dividends in cooperatives is made easy.
8. They help a farmer in drawing up plans in terms of organizing rotations, formulating policies and selecting farm enterprises.
9. Records can be used in animal breeding especially pedigree selection where the history of the animals' relatives is crucial.
10. Records are very important in solving disputes more especially at the death of senior member of the family and any other organization.
11. To have good inventory of farm property that can reduce the chances of property loss.
12. Proper assessment of labour on the farm can be done basing on the records like master roll.

CATEGORIES OF FARM RECORDS

These are of two categories; Production records and farm accounts

Production records include; these include; labour, crop production and animal production records.
Animal production records; feeding, breeding, health, birth, death and milk production records

Farm accounts include; these include; financial documents, financial books and financial statements.

Financial documents are invoices, receipts, delivery notes, purchase order and statements

i. Invoice this is issued to the farmer when he orders for farm inputs and it shows the quantity, price and cost of delivered goods.
ii. Receipt; it's a financial document issued by the seller to the buyer as a proof that the items bought have been paid for.
iii. Delivery note; its is prepared by the seller to the buyer showing the items included in the order and supplied to the buyer.
iv. Purchase order; this is prepared by the buyer to the seller on the goods he wants to obtain
v. Statement ; this is a bill showing details of various orders over a period of time after receiving several supplies
vi.

Financial books are inventories and cash books.

i. Inventory ; this is where a farmer records everything he owns on the farm
ii. Cash book; this shows the receipts and expenses on the farm over a specified period

Financial statements; These are budgets, trading account, profit and loss account and balance

sheet

Budget

This is a financial statement outlining the anticipated farm revenue and expenditure for the forth coming financial period.

Types of budgets

i. Partial budget- this is financial statement outlining the anticipated revenue and expenditure for an enterprise or a part of the whole farm in forth coming financial period.

ii. Complete budget- this is financial statement outlining the anticipated revenue and expenditure for the whole farm in the forth coming financial period.

Importance of farm budgeting

a. Enable the farmer to achieve the set farm objectives
b. Acts as a guide for the farmer in executing financial decision
c. Motivates the farmer to work hard to achieve the set goals for the budget
d. Helps a farmer in forecasting profits and losses i.e. estimating profitability of the farm
e. Used in decision making when comparing enterprises
f. Helps a farmer to control production on the farm
g. Helps the farmer in making effective changes in the organization
h. Helps the farmer in estimating the required resources in terms of labor, capital, e.t.c.
i. Guides and helps a farmer in soliciting for funds to run the farm
j. Can be used as a reference during future planning

Procedure of making a budget

a. State the objectives of the farming business so that the budget can answer such objectives
b. List all the enterprises found on the farm
c. List all the available resources that can be used in production
d. List the anticipated profit and their source
e. Calculate the fixed costs in the next trading year or period
f. Work out the costs that would occur in the year's business directly as a result of changes
g. Calculate the opportunity cost of any input so as to make the right decision
h. Consider the difference between total credit and total debit as the change in the net income

Points considered in budgeting

a) Least combination of the factors used on the farm
b) Farmer's expectations through time
c) Opportunity cost for factors of production

Important information in budgeting

a. Results from research stations-these can show the expected production of an enterprise
b. Data on input-output relationships i.e. production function
c. Cost of input and output information so as to forecast losses and profits
d. Farm records on operations of the farm

Constraints in budgeting

a) Failure to see or identify supplementary or complementary enterprises
b) Inadequate knowledge about budgeting
c) Inadequate technical information needed in budgeting
d) Bias in choosing enterprises instead of aiming at optimizing profits
e) Inadequate market information on prices of inputs and outputs
f) Price fluctuations in agriculture that make anticipations to be unachievable

Profit and loss account-this is a financial statement drawn by the farmer to find out the net profit of his farm business. Net profit = gross profit - fixed costs.
Gross profit is the difference between **total revenue** and **variable expenses i.e Gross Profit = Total Revenue – Variable expenses.**

Example. Given the following information, draw up a profit and account to find the Net profit or loss as at 31st July 2009

Fertilizer purchase- 200,000
Heifer sales 1,500,000
Milk sales- 400,000.
Crop sales- 700,000
Seed purchase- 180,000.
Depreciation 200,000
Closing valuation- 1,800,000.
Salary 1,000,000
Opening valuation- 750,000.
Rent 300,000
Feed purchase- 150,000
Interest on loan 200,000
Casual labour- 150,000
Drug purchase- 10,000

Profit and loss account as at 31st July 2009

Purchases and Expenses	Cost	Sales and Receipts	Cost
Fertilizer purchase	200,000	Heifer sales	1,500,000
Seed purchase	180,000	Crop sales	700,000
Feed	150,000	Milk	400,000
Drug	10,000	Eggs	350,000
Casual labour	150,000	Closing valuation	1,800,000
Opening valuation	750,000		
Salary	1,000,000		
Depreciation	200,000		
Rent	300,000		
Interest on loan	200,000		
TOTAL EXPENSES AND	**3,140,000**		

PURCHASES			
Net profit	**1,610,000**		
TOTAL	**4,750,000**		**4,750,000**

Closing valuation- this is the value of assets a farm has at the end of a financial period e.g. feeds in store.
Opening valuation-. This is the value of assets a farm has at the beginning of a financial period e.g. feeds in store

BALANCE SHEET

This is a financial statement produced at the **end of a financial year** showing the **assets** and **liabilities** of a farm. A farmer draws up a balance sheet to find out the Net profit or loss.
Example. Given the following information about kuluse's farm, draw a balance sheet for the year of 2004.

Cattle value	700,000.		
Bank overdraft	1,000,000	Value of tractor	2,000,000
Value of crops	1,500,000	Depreciation of buildings	700,000
Closing valuation	2,500,000	Salary	3,000,000
Hotel bookings	800,000	Interest on loan	80,000
Milk sales	1,000,000	Debts payable	100,000.
Opening valuation	2,020,00		

Balance sheet for kuluse's farm as at 31st December 2004

Liabilities	Cost	Assets	Cost
Bank Overdraft	1,000,000	Crop value	1,500,000
Depreciation	700,000	Tractor value	2,000,000
Debts payable	100,000	Cattle value	700,000
Interest on loan	80,000	Milk Sales	1,000,000
Salary	3,000,000	Hotel booking	800,000
Opening valuation	2,020,000	Closing valuation	2,500,000
Total liabilities	**6,900,000**		
Net Capital	**1,600,000**		
TOTAL			

	8,500,000		**8,500,000**

Assets; this is money or items that belong to the business
Types of assets

a. **Fixed/long term/non current/permanent assets**; these stay in the business for a long time while being used e.g. land, farm machinery, buildings, furniture, fixtures and fittings.

b. **Current/short term/liquid assets**; these are assets that can be easily converted into cash e.g. stock (meat, milk, eggs, crop produce, feeds, e.t.c.), cash at bank, cash at hand, prepaid expenses, e.t.c.

Liability; this is a claim against the farm by outsiders
Types of liabilities

a. **Current liabilities**; these are claims that must be paid in a short time not exceeding a year e.g. rent, wages, bank overdraft, creditors, e.t.c.

b. **Long term liabilities**; these are claims that must be paid within a long period of time exceeding a year e.g. capital shares, development loan, treasury bills and bonds.

COSTS OF PRODUCTION

1. Fixed costs / overhead costs / Un avoidable costs.

These are expenses that a farmer has to meet whether in production or not. They include; Interest on loans, rent, depreciation, salaries for permanent workers.

2. Variable costs / prime costs.

These are expenses that depend on the level of output or vary with out put e.g. costs for inputs (pesticides, seeds), wages for casual workers increase with output.

3. Implicit cost. These are expenses that are indirect or non cash costs of owned resources e.g. own labour, family labour etc. They are valued using their opportunity cost.
   N.B. They are not included in the calculations of profits of the farm of accounting.
4. Explicit costs

These are direct costs paid for resources bought or hired.

5. Opportunity cost This is a cost for the best alternative foregone in making a decision e.g. if a farmer foregoes poultry farming and takes on dairy then the opportunity cost is that one for poultry.
6. Total variable cost (TVC)

This is the total of the cost of all variable resources used in production (price X quantity)

7. Total fixed cost

This is the value of all the direct cost of fixed resources used in production. Its constant at all levels of output.

8. Total costs It's the sum of all the fixed and variable costs at each level of output i.e total cost will = total variable cost + total fixed cost.

9. Average variable cost It's the amount spent on variable inputs per unit of output.

I.e. AVC = $\frac{TVC}{Y \text{ (Out put)}}$

10. Average fixed cost. It's the cost of the fixed resources per unit of output.

AFC = $\frac{TFC}{Y \text{ (Out put)}}$

11. Average total cost

It's the total cost of all resources (Fixed and variable) per unit of out put

i.e. ATC = $\frac{AVC + AFC}{Y \text{ (Out put)}}$

12. Marginal cost

This is the change in total cost resulting from a change in one unit of output i.e. it's the cost of producing an additional unit of output.

13. Marginal product.

This is output created by using one additional unit of a factor of production.

14. Normal cost; cost of production converted into monetary terms e.g. wage for workers. As production increases, cost of production increase.

15. Real cost; real pain and sacrifice of labour given by labour in the process of production.

16. Reduced cost; this is money saved when carrying out farm activities e.g. transporting milk to the market and eggs on the same truck save transport costs for one of the products

17. Added cost; these are expenses as a result of investment in a field e.g. construction of a farm building may involve expenses of clearing obstacles from the site

18. Added receipts; money got by a farmer unexpectedly.

COST OUTPUT RELATIONSHIPS

Production function

This is a mathematical relationship between input and output

1. **Total product, TP**

This refers to the total output resulting from all the factors of production (both fixed and variable)

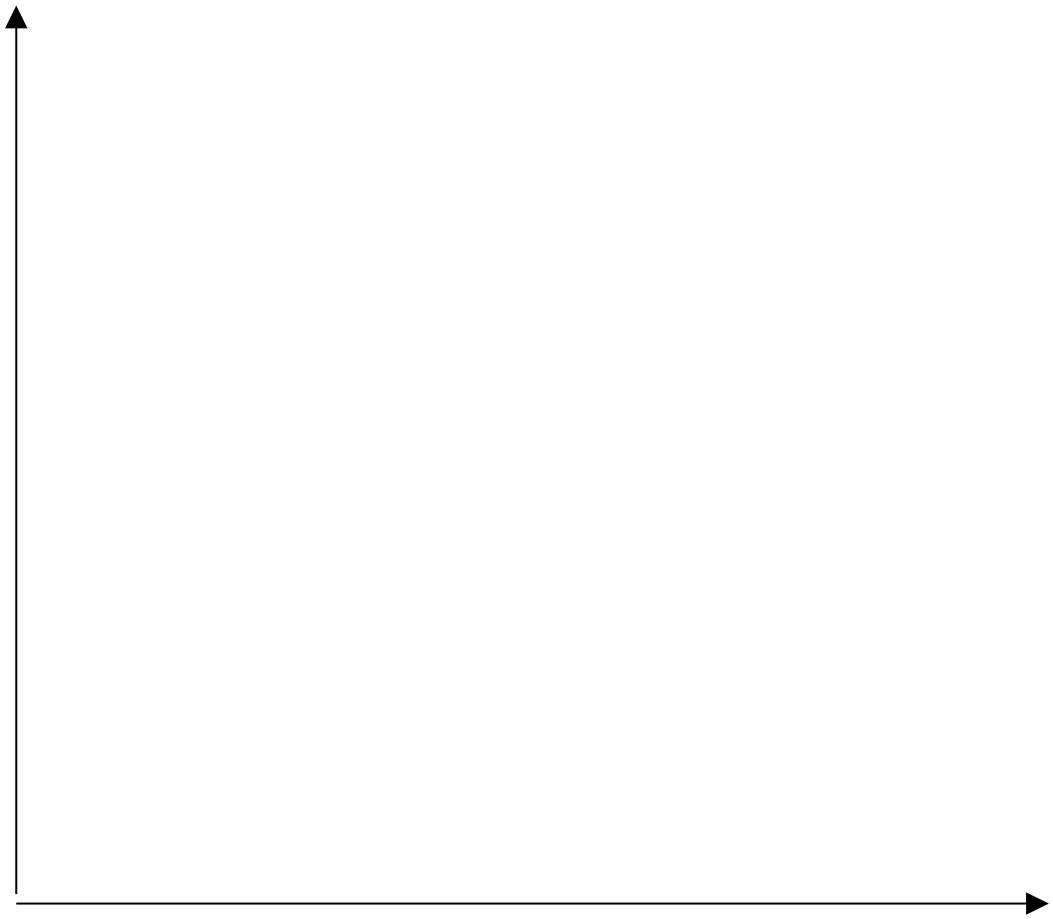
2. **Average product AP**

This is the output per unit of variable factors.

An example of r/s between output and inputs.

Fixed factors (land)	**Quantity of fertilizers used (input)x**	**Total maize TP output (Kg) Y**	**Marginal product (MP)**	**Average product (AP) y/x**
1	1	8	8	8
1	2	18	10	9
1	3	30	12	10

1	4	38	8	9.5
1	5	44	6	8.8
1	6	48	4	8
1	7	48	0	6.9
1	8	46	-2	5.7
1	9	42	-4	5.5



Stage 1: Irrational stage / increasing returns

- Production is not yet maximum
- Increase in variable input increases output.
- Most farmers in Uganda operate at this stage since they have little knowledge about maximization of profits or lack capital.
- This relationship doesn't continue for long because the soil becomes over saturated with fertilizers causing harmful effects.
- Marginal product increases more than average product
- When average product is maximum, its equal to marginal product

Stage 2: Decreasing returns / rational stage

- The total product increases but at a decreasing rate
- Marginal product decreases until it reaches zero at the end of the region.
- A farmer operating in this region with proper advice from qualified staff would benefit much.
- This type of production function is the most common type in agriculture production.
- Average product decreases throughout the region
- Decision to increase or decrease variable factor should come at the end of the stage where marginal product is zero

Stage 3: Region of no returns / irrational

- It starts when marginal product is zero
- It's an irrational region and this situation can arise as a result of using too much fertilizers in this case.
- Advice is that the farmer should not over use variable inputs but seek advice from extension staff.

Recommendations about input use

- More imports must be added until stage 2 is reached because the physical efficiency measured by average products increases throughout stage 1.
- Even if the inputs is free, it should not be used in stage 3

Law of diminishing returns:

As you add more and more successive units of a variable factor to a fixed factor while holding other factors constant (ceteris paribus), total production increases but beyond a certain point (point of inflection / bliss point) the resulting increase will become smaller and smaller.

RISKS AND UNCERTAINITIES

A risk is an avoidable and unforeseeable circumstance or hazard that affects the outcome of an investment and can be **measured** in an **empirical** and **quantitative** manner. Since the risks are measurable, they can be insured against.

Uncertainty, this is unforeseeable and unavoidable circumstances or hazard that affects the outcome of an investment but **cannot** be measured in an empirical and **quantitative** manner hence cannot be insured against.

Examples of risks

1. Change in weather or bad weather which causes destruction to crops, building and

animals.

2. Pest and diseases.
   This can cause losses in both plants and animals.
3. Fire outbreak
   This can cause destruction to property and life.
4. Theft
   This can be of farm produce and machinery yet it's hard to predict when it will happen.
5. Strikes of workers.
   Some of the strikes are very destructive and lead to loss of property and life at the extreme cases.
6. Ill health
   The farmer, members of his family, all the workers can fall sick which can greatly affect the production level of the farm.
7. Low crop yields.
   This may be caused by many factors like poor soils, natural hazards, pests and diseases, poor management etc.
8. Death of the farmer. This is unpredictable and may be a source of management problems on the farm.

Guarding against risks.

1. Insurance.
   This is the most common method of guarding against risks where the farmer insures his property with an insurance company against risks. The company can compensate the loss once it occurs as prior agreed
2. Building owners' equity.
   This is where a farmer saves some money that can be used in case there is a risk (net worth)
3. Input rationing.
   Here a farmer uses less than optimum quantities of inputs to save on the amount spent on input.
   Improving storage facilities i.e. one can lead produce and sale later
4. choosing an enterprise with less or limited risks hence helping a farmer to easily escape risks.
5. Diversification.
   This is where a farmer engages in more than one enterprise so that incase one fails the other may succeed and compensate the loss made.
6. Production flexibility
   This is where a farmer invests inflexible enterprises that easily allow a change e.g keeping

duo purpose breeds of cattle and poultry.

UNCERTAINTIES

Examples

1. Price fluctuations
   It's very difficult to know when the prices will fluctuate and the loss which will come out of this is extremely difficult to calculate.
2. Change in demand.
   The demand for agricultural products keep on changing yet the loss as a result of this is difficult to measure.
3. Change in technology.
   Because of rapid technological changes, machinery and farm techniques quickly become outdated.
4. Change in government policies.
   The government may reduce prices of commodities by covering taxes and vise versa.
5. Bleach of contract
   This can happen anytime without notice and may cause immeasurable loss depending on the commodities.
6. Unavailability of labour.
   This may happen during planting and harvesting time yet the losses in causes it's immeasurable. This change in labour supply is due to a number of factors affecting it.
7. Unavailability of agriculture inputs.
   The supply of such inputs is affected by a number of factors therefore their scarcity once experienced can cause uncertainty.

Control of uncertainties

1. producing on contract
2. building owners equity
3. diversification
4. Input rationing to guard against loss as a result of price fluctuation.
5. Flexibility i.e. easily change from one type of production to another
6. Improving storage facilities.
7. Adding value of agriculture products through processing.

SPECIALIZATION

This is where one engages in the production of one item where he can feature best.

Forms of specialization

1. specialization by craft

This is where families specialize in different activities like farming, iron smith, witch craft etc.

2. Specialization by process

This is where every stage of production in a factory or an industry is carried out by a different person.

3. Regional specialization

This is where each region produces the best it can and the changes it with what it can't produce.

4. International Specialization

This is where each country produces what it can do best and exchanges it with what is produced by other countries.

Advantages of specialization

1. Its time saving

There is no wastage of time in moving from job to job or training for different jobs.

2. High efficiency in production since the workers gains a lot of experience and skills in doing one type of work.
3. It enables the farmers to exploit their natural talents by concentrating on the work they can do best.
4. It encourages the use of machines at various production levels which increases production.
5. Regional and international specialization enables countries to exploit their natural resources and get what they cannot produce.
6. It encourages farms to employ specialists at different stages of production leading to efficiency.
7. It increases production which helps farmers to gain from the economy scale.

Disadvantages

1. Large scale production may be limited by a low market for the produce.
2. It may lead to unemployment incase of change in technology and fashion.
3. It may lead to over dependence incase of international specialization
4. It may lead to boredom to repetition of the same work.
5. It encourages the use of specialized machines which cannot serve more-than one purpose.
6. It encourages loss of craftsmanship since workers depend on machines to do the work.

DIVERSIFICATION

In Agriculture, diversification is the raising of the variety of crops or animals as opposed to one enterprise.

Advantages

1. Resources are effectively utilized in the production process
2. It reduces risks that are associated in producing one type of crop or animal.
3. It increases a variety of products produced in a country.

4. It encourages the participation of many people in the production process to produce the different goods.
5. It reduces over dependence on products from one place or country.

Disadvantages

1. The practice is limited by inadequate capital to engage in different enterprises.
2. Limited market for a variety of products may affect diversification
3. Limited farm implements may discourage diversification
4. Its very difficult to carry out research on a variety of crops and animals to increase their production.
5. Climate may not favour the production of various products.
6. It encourages subsistence farming which is less profitable.

CO-OPERATIVES

This is a registered organization of people who decide to work together for mutual economic benefits.

Types of co-operatives:

1. **Transport co-operatives**

These deal with the transport of produce either for the members or for profit from other organizations e.g. Uganda Co-operative transport union.

2. **Credit savings co-operatives.**

These deal with savings of member's money and provision of small loans e.g. Uganda Women Credit and trust fund.

3. **Consumer Co-operative**

These stock and sell commodities to members at subsidized prices and can also give financial assistance to members.

4. **Producer co-operatives.**

These are concerned with the marketing of the farmer /members produce e.g. the former Busoga grower's co-operative union, Masaka co-operative union.

5. **Trade and craft co-operatives.**

These are mainly concerned with building and construction work.

Principles of co—operatives

These are the basic guidelines on which the formation and day to day running of co-operatives is based.

1. *Open and voluntary membership*.

All people are free to join or leave the co-operative without hindrance or restriction of any kind.

2. *Democracy*

Co-operatives are run on democratic principles even when elections are held for the leaders i.e. one man one vote.

3. Interest and profit.

The rate of return on borrowed capital should be low since the organization is not a profit making one.

4. *Capital shares*

The financial capital for co-operatives is raised through the selling of shares to the members.

5. *Co-operation*

Co-operatives must work together with other co-operative organizations in order to learn from each other.

6. *Neutrality*

Co-operatives must be neutral in politics, religion or any other bias that can affect their operation.

7. Promotion of members

All promotions to places of high responsibility must be based on merit.

8. Education

Co-operatives must promote education for their members in order to reduce the rate of illiteracy and also increase the skills needed in running of the co-operative.

9. Continuous expansion

A co-operative must have continuous expansion in terms of members and physical facilities i.e. building machinery.

10. Share of dividends

There is share of dividends after calculating how much members have contributed to the co-operatives.

Importance of co-operatives

a. Can prove loans to members for development
b. Bring together many farmers to achieve large scale farming
c. Promote education and training for member to achieve high levels of management
d. Provide market for farmers produce by buying commodities from farmers
e. Store farmers produce before selling reducing risks to farmers
f. Can provide employment to members as accountant and managers
g. Can provide transport for produce from farms to the market
h. Can provide inputs to farmers at subsidized prices to increase profits
i. Some produce can process produce to add value before selling
j. Co-operatives can mobilize prices for agricultural products by buying produce during periods of abundant supply and selling it at times of scarcity.
k. They can increase investments for the members by buying buildings, estates, factories on

behalf of the co-operators.

l. They eliminate wasteful competition and exploitation of farmers by middle men hence increasing the farmer's profit margins.
m. They increase the bargaining power of members in the market and protect the weak ones.

Problems of co-operatives

1. Inadequate skills of management amongst farmers which makes them incompetent in organizing co-operatives.
2. Inadequate funds to finance the work for co-operatives which limit the investments and expansion of the co-operatives.
3. Embezzlement and corruption by managers has reduced the growth of most co-peratives in Uganda.
4. Inadequate transport; some co-operatives do not have trucks that can easily transport produce to places where there is enough market.
5. Shortage of storage facilities; most co-operatives in rural areas do not have enough stores with facilities like freezers that can help in storing produce.
6. Fluctuating prices for agriculture produce; the fluctuation in prices more especially at the world market has affected the income for co-operatives hence their operations hindered.
7. High risks and uncertainties in agriculture; these reduce the profit margin for cooperatives which greatly discourages the farmers.
8. Political interference; some politicians in government have influenced the decision in co-operatives which greatly affects their performance.
9. Political Instabilities; in places where there is insurgency it's been very difficult for co-operatives to operate.
10. Dishonesty of members who refuse o pay back the loans or sale their produce to other co-operatives.
11. A high competition from private sector which has affected the amounts of profits that can be made.

Solutions

1. More centers for training managers should be set up to equip managers with skills.
2. Co-operatives should access loans from banks and other lending institutions incase of lack of funds.
3. Constant auditing should be done so that the managers are made to be more accountable to the loses made hence reduce embezzlement.
4. Self discipline of politicians should be encouraged to reduce political interference in cooperatives.

5. Government should support co-operatives by operating the price stabilization funds incase of low prices.
6. Members borrowing money from co-operatives should present security in order to reduce defaulting.
7. Government should maintain political stability in all parts of the country
8. Agricultural insurance facility should be adopted to help cooperatives overcome risks
9. Agro processing should be encouraged in rural areas by setting up factories to add value to produce
10. Rural road network should be improved to make transportation of produce easy

MARKETING BOARDS.

These are public bodies set up by government to assist farmers in the production, processing and marketing of agriculture products.

Specific aims of marketing boards.

1. To help farmers in order to produce high quality agriculture products.
2. To provide essential storage facilities for agricultural products
3. To assist farmers by improving efficiency in marketing processes to reduce competition amongst them.
4. To ensure steady supply of agricultural goods to the final consumers and processors.
5. To set and guarantee prices for the goods produced by farmers.

Types of marketing boards.

1. produce marketing boards
2. Specialized industry boards.
3. advisory boards
4. Monopoly export boards.

Examples of marketing boards in Uganda

1. Coffee marketing board
2. Lint Marketing Board
3. Produce Marketing Board
4. Diary Board
5. Uganda Tea Growers co-operation

Functions of marketing boards.

1. They buy produce from farmers in large quantities at fair prices.
2. They advice government when fixing prices for agricultural produce
3. They collect agriculture products from farmers and transport them to the market.
4. They ensure that produce from farmers is of high quality to meet the market standards.
5. Marketing boards can store agriculture produce on behalf of the farmer more especially during periods of surplus when prices are low.
6. they can offer credit to farmers in form of loans and inputs
7. Marketing boards can finance research in the development of best quality agriculture products.
8. They can control production by fixing quarters or limitations licenses to producers.
9. They can sale produce to local processors or export it to the world market.
10. Marketing boards can enforce quarantine measures against pest and diseases within a particular area.
11. They can also disseminate research information to the farmers in villages.
12. Marketing boards can also invest money in public services like housing projects, hospitals etc.

Problems of marketing boards.

1. political interference

Politicians through government interfere with activities of marketing boards by influencing management and acquisition of financial support.

2. Smuggling

This introduces cheap products on the market therefore reducing profits margins for marketing boards.

3. Price fixing

Marketing boards fix prices before harvesting and sometimes surplus production may come with problems of purchase.

4. Inadequate storage facilities that can cause losses to the boards hence low development.
5. Excessive production

Production in agriculture depends on weather hence favourable conditions cause over production leading to low market prices.

6. Delayed payment of farmers

This discourages farmers from selling their produce to marketing boards.

7. Poor road network in rural areas makes transportation of agriculture products more expensive and difficult for the marketing boards.
8. Loan defaulting

Some farmers fail to pay back the loan given to them by marketing boards which affects the performance of the marketing boards.

9. competition with private individual which may reduce profits for marketing boards