Economics

What is agricultural economics?

Agricultural economies is the study of how best to produce crops and farm animals with scarce resources to get maximum returns (profits). It helps the farmer to use the cheapest means of production sell at the best price in order to get high profits. It helps the farmer to decide correctly on the following:

1. What to produce.
2. How much to produce.
3. How to produce
4. When to produce / sell.
5. Where to sell i.e. for whom to produce.

The role of agriculture in development.

1. Food security: the consistent sustainable supply of food is necessary for economic development to take place hence agriculture is a source of food for the population. Governments spend a lot of money and experience budget failures when droughts/ food shortage occur.
2. Distribution of income: farmers obtain income from agriculture and it is well distributed in the population because the majority of Ugandans are involved in agriculture. Therefore the improving agriculture is the easiest way of distributing income of the population.
3. Increased government income: since mot of Ugandans depend on agriculture and they pay taxes to the government, agriculture contributes much to this revenue. E.g. from local markets.
4. Source of foreign exchange: Agricultural products contribute the greatest percentage of exports and also the highest percentage of foreign exchange. This helps to settle the balance of payments and provide foreign exchange for imported machinery and other technologies.
5. Source of employment: Many people get employed in livestock farms and plantations, trading in farm products and their process.
6. Supply of raw materials for agro based industries: increase in farm products promotes development of processing factories and other factories or industries e.g. oil, leather turning and textile industries all of which depend on agriculture.
7. Importing markets for industrial products: agriculture provides income to the population and this increases demand for manufactured goods and other services (purchasing power on a population depends on its level of income.
8. Infrastructure development: Agriculture helps to set up infrastructure like the roads, schools, hospitals, electricity especially in places where plantations of crops are located and other farm products come from.
9. Diversification of the economy: Uganda has the advantage of good climate and good soils and therefore it has and advantage of producing some products more cheaply than other countries. It helps the government to rely on its agriculture for income among other sources.

POPULATION AND WORLD FOOD PROBLEMS

Population is the number of people living in an area at a particular time. The number of people in an area is important economically because it's the source of labour supply for production and it is the major source of market for goods and services. Population can be described in terms of size (total population), structure, composition, density and distribution.

Population size

This refers to the total number of people in an area whether young, old, female, male, sick or healthy, immigrants or natives. Population numbers grow with time therefore the size of population numbers grow with time therefore the size of population may increase or decrease.

Population growth rate

This is the rate at which population size changes with time and is expressed as a percentage. It's determined by the number of deaths and number of births in an area at a given time.

Population growth rate = Birth rate – death rate

Population growth may be natural of artificial – Natural growth results from an increase in birth rate and a decrease in death rate. Artificial population growth is caused by an increase in the number of immigrants such as refuges and job seekers.

Birth rate:

This is the number of live children born in a year. Out of every 1000 people in an area expressed as percentage. If 40 babies are born and 20 people die in a year out of 1000 people, the birth rate would be 4% and the death rate would be 2%.

Death Rate:

The number of people that die in every 1000 people in a year in an area also expressed as percentage. The death rates in the above case will be 2%. The growth rate of such a population is;

BR – DR = 4 – 2 = 2%

The number of people who die before their life expectancy in a year in an area make up the mortality rate. This may be infant mortality rate for babies, material mortality rate for mothers and adolescent mortality rate. When there is a rapid increase in population of an area in relation to the available resources, population growth is referred to as an explosion.

Factors that influence population growth:

1. Early marriages: This leads to high fertility rates giving rise to a high number of children per couple in their life time. Late marriages reduce the number of children per couple.
2. Immorality: This produces a high number of unplanned children such as kids.
3. Improved standards of living: Good medical care, hygiene and sanitation reduce mortality rate and increase population growth. Poor standards of living increases risks of death and may reduce population standards of living increase risks of death and may reduce population.
4. Food Security: Increased food supply and nutrition improve the fertility rate and more people are born. Food shortages result into malnutrition which encourage diseases, infertility and decrease in population.
5. Migrations: Increased numbers of people coming to or going out of an area due to jobs, disasters, wars cause population change.
6. Education: increased levels of education improve hygiene, sanitation, housing and feeding thereby reducing mortality.
7. Cultures/ traditions: In some cultures and religions, polygamy is promoted and this increase the number of children born per man's reproductive life which increases population growth.
8. Wars/ political stability: rebellions and wars cause the death of very many people and reduce population growth. Political instability favors increase in population.
9. Disasters (Natural): Natural factors such as floods, earth quakes, and disease epidemics bring about death of very many people and reduce population growth.
10. Birth Control: The number of children born per couple may be reduced artificially by late marriages and crudely by abortion and contraceptives.

Over population

This refers to an excess population in relation to the resources available. It makes output per capita very low.

Advantages of high population

1. It increases the size of the domestic market for manufactured and agricultural commodities as well as services.
2. It increases the supply of labor force to carry out productive activities.
3. It facilitates the mobility of labour from one area to another.
4. There's expansion of investments as many people continue to invest due to increased incomes and increased consumptions.

5. There's increased pressure on development effort which stimulates innovations that produces many improvements.

Disadvantages due to excess population:

1. Poorer standards of living such as poor sanitation, overcrowding, food shortages due to low incomes and savings.
2. Adequate facilities like water supply, roads, electricity, schools, medical services e.t.c due to excessive demand.
3. Inflation due to increased demand and services due to increased demand than supply for goods and services. This also encourages importation resulting in balance of payment problems. (B.O.P)
4. Increased unskilled labour and illiteracy due to shortage of facilities like especially schooling facilities
5. Unemployment: Many people leaves school and find no appropriate jobs which also leads to lose of skilled man power. i.e. brain drain.
6. Rural – urban migration which result into slum problems/ crimes in urban areas.
7. Over exploitation of natural resources leading to deforestation, reclamation of wetlands, over grazing which degrade the environment.
8. Increased need for foreign aid which increases the debt burden for a country.

An optimum is one which provides sufficient labour to utilize available resources and yield maximum output to a worker.

Population structure composition:

Structure refers to the age makeup of the population while composition refers to the proportion of males and females in the area. The age structure can be categorized as below 18 (the young) and the dependents: 19 – 65 years which is the working age group also referred to as the supporting ratio: above 65 Years who are aged and some of these are also dependents.

Developed countries have many old, few working age and few young dependents due to low birth rates and low death rates.

Developing countries rate more dependents with a fairly large working age and few young dependents due to low birth rates and low death and low life expectancy.

Population distribution and density:

Population distribution refers to where people are leaving and how many live in a particular area. It shows where labour is available or working. Rural areas have less population compared to urban areas. Population distribution is explained by economic, social and physical factors.

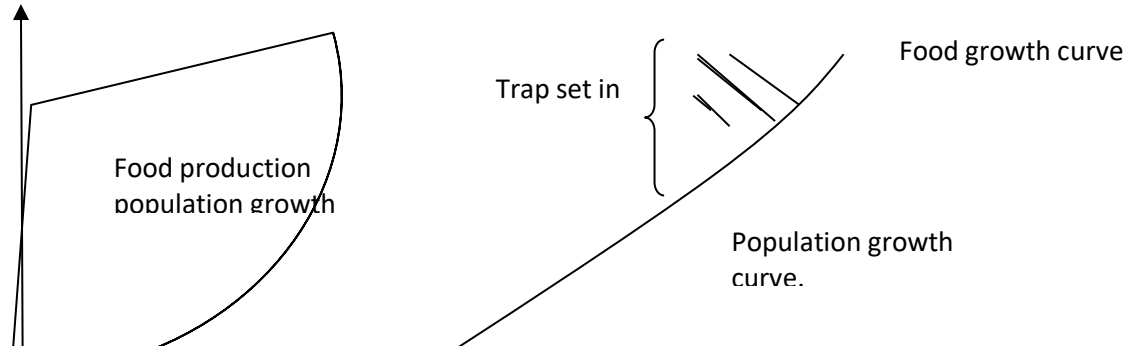
Population density refers to the number of people living in an area per unit area/ square unit. This is also high in urban than rural. When it's high especially in farming areas, it increases pressure on land and results into land fragmentation and land degradation.

Malthusian theory on population

Malthus looked at the relationship between population growth and economic growth especially food regarding land as fixed in supply. He fore saw at the time that population would diminish due to lack of food because food supply would not be enough to feed the population in future. He made the following assumptions.

1. Population increases at a geometric rate e.g. 0, 2, 4, 8, 16, 32 ….while food production increased at an arithmetic progression. He also observed that population doubles every 20 – 30 years. If its unchecked.
2. As food supply increases also. At one time the population would exceed food production causing a population trap and this is a situation where man would not feed himself and there would be a lot of misery, disease and death.

Illustration of Malthusian population trap



Relevance of Malthusian theory

1. Land is actually fixed in supply although its productivity be improved by fertilizers.
2. It's also true that as food supply increases, population normally increases.
3. Land productivity is normally subjected to the law of diminishing returns.
4. Its observations were made in Britain during the green resolutions when the birth rates were increasing and the death rates declining.
5. Famine, wars, disease epidemics, accidents and contraceptives have set in because he said that unless there were positive checks to population as wars, floods e.t.c, that the trap would set in.

Criticism of the Malthusian theory.

1. He did not foresee the possibility of improved farm management and technology e.g. Fertilizers, hybrid varieties, animals and tractors which increase productivity of land and labour beyond their natural level.
2. He didn't foresee improvement in transport and communication where food can easily be transported from areas of pretty to areas of shortage.
3. Population may not actually grow at geometric progression and food supply doesn't only grow at A.P
4. He didn't specify the time at which the trap would set in.

Measurements used to reach in food production and population growth.

1. Controlling population expansion by employing birth control measures e.g. late marriages, discourage pre – marital birth, restrict polygamy.
2. Increase levels of education in order to improve production of goods/ commodities and services.
3. Use improved technology(s) e.g. drought resistant varieties and breeds with high productivity, irrigation and mechanization.
4. Increase research activities to continually produce appropriate techniques of production e.g. improved storage, reservation of foods, conserve of soil and water.
5. Increasing extension services to farmers to enable them us the right techniques of production such as disease and pest control, timing of operations, improved varieties and storage and demand driven production labelism substance production.
6. Increasing financial assistance to farmers (credit facilities) to enable farmers to carry out timely operations, mechanize farms, process and transport produce.
7. Improving marketing organization such as transport and communication bargaining power by forming co-operatives, stabilizing prices, adding value by processing and improved storage.

THE STRUCTURE AND CHARACTERISTICS OF THE AGRICULTURAL SECTOR IN UGANDA.

1. The agriculture sector is Uganda is the dominant sector in the economy contributing over 60% of GDP (growth domestic product) and it employs the biggest percentage of the population above 80%
2. The sector has both subsistence and commercial production. Subsistence contributes over 5%
3. Agriculture is partly mechanized with animal pulled equipment, hand operated machines and to a small extent tractor mechanization.
4. The sector is mainly dependent on nature for water supply, fertility making production seasonal.
5. Land is unfairly distributed and many parts of land are highly fragmented.
6. The sector exports low value added products (raw) and processing is on a limited level due to low levels of technology.

7. Most of the cash crops grown are plantation crops and food crops are highly grown in highly populated areas.
8. The sector is dominated by peasant farmers and the level of production is still low.
9. The degree of diversification is low such that where different enterprises are produced, they aren't well intergraded. E.g. most of the livestock, production occurs in semi – arid areas where growing is limited.
10. A small percentage of the educated population has taken up farming i.e. most of the farming is done by the uneducated people.

Problems facing the Agricultural Sector.

- Land fragmentation has affected the people practicing agriculture due to shortage of land where agriculture could be practiced hence low agricultural produce generated. There is also inadequate capital for the farmers to invest in the sector.
- Few or no demonstration farms especially in rural areas where agriculture takes place most. Most farmers lack educational skills on how to improve on their agriculture.
- Pests and diseases have also contributed to the decline of agriculture. Most farmers don't have enough capital to buy pesticides to control pests and diseases biologically.
- Cultural conservatism due to aged people's superstitions has also become a problem to agriculture. Some people however, take these superstitions seriously yet they are false which reduces on the agricultural sector.
- Price fluctuation especially on the international market which also influences the home market, has discouraged some farmers to practice agriculture.
- Undeveloped home markets which is a result of poor roads to them also influences farmers to ignore agriculture hence its decline.
- Natural hazards like sand storm, earth quakes heavy rains and heavy sunshine which also destroy some crops on the farm may have caused the decline in agriculture hence a problem.
- Poor methods of farming especially in rural areas where there's no access to demonstration farms to learn on how to improve certain methods of farming.
- Remoteness of the area – for example in kisoro, there's no expectation that some agricultural produce that will be produced from there is for the commercial market due to poor roads and the remoteness of the area which discourages farmers.

Subsistence farming

This is producing for home consumption without objective of selling. Farmers may sell a surplus.

Characteristics of subsistence production

1. Production / output per unit of labour and land is low.
2. Simple technology is used such as depending on nature only.
3. Production is greatly influenced by social attitudes and beliefs.
4. There's no aspect of specialization and therefore exchange is limited.
5. It lacks regular supply of production of surplus of production therefore can't sustain supply of goods.
6. Family labour is the main basis of production.
7. There's limited or no government intervention e.g. taxing, provision if

Advantages of subsistence farming.

1. It is more flexible and the farmer finds it easy to change to any enterprise and level of production.
2. It involves very little risks and uncertainties since there's no aspect of specialization.
3. The farmer doesn't spend on labour as he makes use of his own family labour.
4. It requires very little capital as the farmer doesn't spend on the farm inputs.
5. He produces all that he needs and he may get an income from the surplus.
6. A variety of farm products are produced.

Disadvantages of subsistence farming.

1. Output is low and it can't support the growing populations.
2. It depends on nature only and may be seriously hindered by natural disasters like drought.
3. It limits economic development as it doesn't encourage exchange e.g. export.

4. It doesn't generate revenue for the government and therefore doesn't contribute much to national income.

Measures to reduce subsistence farming.

Subsistence is encouraged by the following:

1. High population density which leads to land fragmentation.
2. Lack of skilled labour/ trained people.
3. Inadequate capital / credit facilities.
4. Lack of proper marketing organization e.g. low prices, poor storage and transport.
5. Effects of land tenure system.

The measures to discourage and abolish subsistence sector include;

1. Increased education and training (extension services) to remove conservative tendencies and increase management skills.
2. Making co-operative movement to improve purchasing storage, processing, transport and bargaining.
3. To improve credit facilities to farmers to expand production
4. Encourage specialization to increase output quality and efficiency.
5. Restructuring land tenure systems to provide enough land.
6. Establish and maintain adequate infrastructure to link rural areas with urban/ market areas.

LAND TENURE SYSTEMS' IN UGANDA AND AGRICULTURAL PRODUCTION.

Land tenure refers to land holding and use while land tenure system refers to the way land is owned used and passed over from generation to the next. It concerns the rights to use land, sell it or pass it on. A good land tenure system has the following characteristics;

1. Allows the reform programs such as resettlement, consolidation e.t.c.
2. Allows effective use of land with suitable methods of production.
3. Allows commercialization and discourages subsistence farming.
4. Allows the user to develop land and conserve it e.g. improving productivity of the land.

Land tenure systems in Uganda include; communal land tenure, free hold / individual land tenure, lease hold land tenure system, mailo land tenure, state ownership and co-operative tenure.

Communal/customary land tenure system

Land belongs to a community is controlled by community leaders. It is used communally i.e. everybody is free to graze/ cultivate anywhere though individuals may be given small portions where to settle.

It discourages unequal land distribution and minimizes conflicts over land. Productivity and income from the land are fairly low.

Simple technology is commonly used and subsistence production carried out. Farmers cannot use it to get loans and there are no developments on the land and is not conserved i.e. land is often over grazed, cultivated or deforested leading to erosion and degradation. Individuals are not allowed to sell land.

Free Hold Land tenure

Land is owned by individuals. They have been given land tittles for free ho d tenure. Individuals are free to sell land and use it at will. Land can be conserved and is controlled by the owners. It is the most secure firm of land ownership but it encourages land inequality.

LEASE HOLD TENURE

Land is owned by the government which supervises land use. An individual applies for the holding and use of land and its given him on lease for periods like 29, 49, or 99 years upon paying some money. The individual is free to use the land and sell it within the period. It is usually surveyed with clear boundary marks and marked. The owner can't get bank loans and develop the land fully but it also promotes unequal land distribution.

Mailo Land Ownership

Land is owned by a few individuals referred to as landlords. They hold very big stretches of land and the system is found in Buganda, Tooro, Bunyoro and parts of Ankole. The landlord is free to sell land/ rest it to other people (tenants) who used it to pay him rent. Tenants are not secure on land to carryout long term developments. Land lords cannot utilize the land fully because they are often absent from the land.

State ownership

Land is owned by the government and it directs all the use of land and developments. It was the case in Uganda before independence where all the land belonged to the British queen. Some people were given leases to hold land later and free hold tittles but some places still remained under the ownership of the state such as wetlands, research stations and government firms, government administrative offices and hospitals, national parks and forestry.

State ownership has advantages that it finds it easy to carryout demonstration activities and research, resettle populations and reform land use programs.

Effects of land tenure system on agriculture

1. Individual ownership promotes efficiency and expansion of agricultural production.
2. Individual ownership and lease hold make it easy to conserve land and increases sustainability of land productivity
3. There's limited land utilization with communal and mailo land tenure system as they limit occupants from selling land or doing permanent investments.
4. Communal land and free hand systems encourage land fragmentation which makes firms difficult to mechanize and reduce output.
5. Communal land and free hold system also encourage subsistence production which reduce output.
6. Communal ownership allows over stocking overgrazing, over cultivation, deforestation e.t.c.
7. Communal lands and free hold systems discourage plantation farming only allowing annual crop production.

Land reform

This is changing the existing land tenure system to bring about more effective control and use of land. Land reform programs / options could be; land consolidation, deliberate land redistribution, demarcation and registration, settlement and resettlement schemes.

Importance of land reforms

- Reform of land tenure systems using any of the above programs has the following advantages;
- The owner gets security of tenure and conflicts are reduced e.g. consolidation and registration.
- Land consolidation saves time and money by reduced movements from one plot to another under fragmented systems
- Land consolidation makes it easier to monitor and supervise enterprises and even plan for land use.
- Well planned resettlement schemes remove population pressure on land.
- Farmers obtain land tittles which they can use to obtain loans to develop and to conserve land.
- It allows land to be fully utilized unlike the mailo land and some communal systems.
- It allows full participation of people in production avoiding landlessness and this increases productivity.
- It may improve marketing of agriculture produce when resettlement of people is done properly.
- It makes it easy for the government to provide facilities such as water, electricity, roads, schools and medical facilities.
- Individual commitment to conserve land and develop it is increased and this increases productivity and conserves the environment.

Land reform programmes

1. Deliberate land redistribution; This is where the government may buy land from foreigners and citizens and transfer it to landless citizens that can utilize it better. This is used to reform the mailo land system and the communal systems. It involves shifting people and resettling them in other areas. It ensures that

each farmer has enough acreage of land for economical production. It helps to solve urban unemployment and increases utilization of the mailo lands.

2. Land consolidation and registration; fragmented plots of land owned by various people which are too small and uneconomical are grouped together and re allocated to farmers. The lands are registered and tittles are given. Registration process may involve the payment of money by farmers. This also may involve resettlement of other people to other people to other areas to create more room. It helps to increase agricultural productivity, increase security of tenure and improve management and supervision of projects.
3. Demarcation and registration; This is where communal and mailo lands are divided into smaller pieces which individual farmers can pay for and manage productively. The individual farmers can pay for and manage productively. The individuals have the lands registered and titles may be given. It also increases the land productivity.
4. Resettlement schemes; resettlement refers to planned programmes for transferring people from highly populated areas to sparsely populated areas to relieve population pressure. Therefore the reasons or objectives include;
    a. Relieving population pressure on limited land e.g. kabala
    b. Providing land to landless people to engage them in productive activities.
    c. To utilize productive land which is not settled
    d. To create job opportunities for the population.
    e. To conserve land against degradation such as swamps and hill sides
    f. To provide extension services
    g. To carryout government projects such as research, growing new crops to allow mechanization, carryout irrigation e.g. in kasese.

Resettlement schemes in Uganda include the south Busoga (Worthington plan 1944) oruchinga valley in mbarara 1950, kingumba resettlemtnn scheme in N.Bunyoro 1957 and the mubuku irrigation scheme in Western Uganda, Kasese.

Production Economics

Production refers to the process of converting raw materials / inputs into products. It also involves transforming the commodities into forms that yield utility at the time and place convenience to consumers. Its therefore the creation of value in goods and services, creation of wealth and satisfaction of human wants. It therefore includes the following:

- Changing the form of a good at any stage from raw materials to the finished product.
- Changing the situation of a good i.e. by transportation
- Changing the position of a good in time i.e. by storage
- Providing facilitating services to the above processes i.e. by financing
- Creating technical know – how/ skill also to facilitate the above processes i.e. by financing
- Creating technical know – how / skill also to facilitate the above processes i.e. training institutions.

Factors of production

These are the inputs / resources involved in the production of goods and services. They are requirements and determine how much to produce, when to produce, how to produce, where to market, the quality of the product and the form in which the products will appear. These factors include land, labour, capital and entrepreneurship.

1. Land: This refers to the ground, soil, livers, forests, minerals and other nature given resources found in and on the ground surface.
2. Land is limited in supply
3. Its geographically immobile i.e. fixed in location therefore can't be moved from one place to another.
4. It's the basis of productive processes.
5. It can deteriorates in equality if poorly managed and can also improve in quality if well conserved.

Land use planning follows the principle that the most fertile areas are used for crop production if climate conditions are favorable, fairly fertile areas are used for grazing and less fertile soils are used for forestry and

settlement. Less fertile soils may also be used for wild games resources. Payment for the use of land is rent and the rent paying capacity of land is as below:

- Commercial or industrial use gives highest rent
- Residential use gives the 2nd highest of rent
- Farming gives the 3rd highest of rent
- Forest and rough grazing give the lowest rent.

2. Labour: This is human effort (physical and mental) directed at production. Labour may be skilled or unskilled depending on the level of training. Its also categorized as casual, temporary or permanent depending on terms of employment.

Casual labourers are used to immediate jobs only, temporally labourers work on contract which expires with time and they are not pensionable; the reward for labour is therefore a wage/ salary.

Labour supply is determined or affected by the following factors;

- Size of the population in an area: A large size of population tends to avail more people to work but supply is low is sparsely populated areas.
- Structure of the population. Supply of labour depends on the proportion of the population made of young, middle aged and old, proportion of males to females, labour supply is low where there are more women and the young and aged people.
- Length of working hours per day: labour supply is difficult and low where jobs demand long or working hours unless the payment is equally high.
- The wage rates renumeration: Labour supply is easy or high where labour is adequately rewarded.
- Qualification requirement: supply of labour is low when very high levels of education are required while unskilled labour supply is always high especially in high population areas.
- Nature of the job/ working conditions: fewer people after their services where jobs are dangerous / unpleasant.
- Degree to which talents are required: jobs that require special talents find it difficult to get labour than those that require general skills.
- Job security: more secure jobs are more attractive and find labourers easily compared to the jobs where the future can't be predicted.

3. **CAPITAL**: These are manmade resources that are used in the production of goods and services. Capital is classified as liquid capital when its in form of money or other assets easily converted to money which can be used in variety of ways; operating capital is one which changes form within the process of production and may get used up in the process of production such as seeds, fertilizers e.t.c

Functions of Capital

- Acquiring resources for use in production e.g. land and other inputs.
- Increasing the ability of a worker to produce more greater output e.g. mechanizing
- Allow accumulation of larger stocks of goods and services e.g. earning interest in banks or through lending
- Allows/ enables man to perform jobs beyond the level of his strength e.g. employing extra labour.
- Satisfying needs of location, time and form of goods and services i.e. meeting marketing costs e.g. transportation, storage, processing and advertising.

Capital assets can depreciate or be obsolete due to wear, tear or age obsolete. A return to capital invested is referred to as profit while payment for the use of capital invested is referred to as profit while payment for the use of capital borrowed is referred to as profit while payment for the use of capital borrowed is referred to as interest.

Sources of capital include; personal savings, borrowing from financial institutions, grants, donations and gifts.

Factors that influence effectiveness of credit to farmers

- Supervision and monitoring: when credits are given and well monitored, the use of credit becomes more effective.
- Proper assessment of the borrower's ability to pay. This allows the lender to give appropriate amount of loan which is not too much or too little.

- Timeliness of credit disbursement. When this delays too long or its paid too easily, it doesn't become effective. Too early disbursement risks means wastage of money while too late means that the projects may have failed already.
- Level of interest rates charged. Too high interest rates leave no savings for the farmer/ borrower and therefore he can't invest/ project can't grow or its capital.
- Duration of loan period: too short periods are unfavorable because projects may not have reached their take off stage to generate income/ be self sustained and removing money from them kills them.
- Natural hazards like storms, drought which cause failure of the projects.
- Political instabilities: these either alt off market/ supply of inputs or marketing routes/ channels. They may also destroy the already accumulated capital.
- Poor management of the projects. This causes miss allocation of money poor performance of labour and other assets in running the business.

4. ENTREPRENEUSHIP: The ability to organize, coordinate and invest the other factors into production to obtain maximum output. The skills required include making decisions on what to produce, when to produce, how much e.t.c planning how to finance where and when to sell, making innovations e.g. new technology, taking risks and managing them, co-coordinating land, labour and capital e.t.c it can be improves by training.

FACTOR THAT INFLUENCE THE PERFORMANCE OF THE FACTORS OF PRODUCTION.

1. Level of technology: When good technics are used e.g. efficient machines, productivity of labour, capital and other factors increases. Poor technology reduces/ limits output.
2. Attitudes towards work. Positive attitude towards work improves productivity while positive attitude reduce performance of factors like labour.
3. Education/ training: Productivity of the resources may be lowered by levels of education and training and its improved by higher education and more skills training.
4. Health of the population/ labourers. More energetic and healthy labourers produce more than the sickly weak ones.
5. Specialization: This improves skill and increases output for unit of labour.
6. Quality of inputs/ raw materials: Good quality in put increases productivity e.g. good varieties of crops yield higher, good breeds of livestock also yield better.
7. Capital availability: this improves productivity of other factors of production. E.g. sewing machines, praying labour and other facilitating functions.
8. Supervision and monitoring: effective follow up and supervision improves performance of labourers and therefore the capital invested and land resource.
9. Good planning: effective planning places each resource in the right position at the right time where and when they can do their best.
10. Working conditions: when the working conditions are favorable output out of labour and capital is high e.g. when workers are given a favourable atmosphere and incentives, they work to the level best.
11. Climatic conditions: excessive rains or untimely droughts reduce the productivity of land, labour and capital if they are beyond the level of control.
12. Political instability: sewing allows continued investments and full participation of labourers and managers without interference. It improves the performance of all the factors of production.

FACTOR COMBINATION AND THE PRODUCTION FUNCTIONS

Factor combination refers to the proportion in which the factors of production are engaged in own activities to produce goods and services.

Production function is the relationship between the quantities of inputs and the quantities of the products that are obtained in a period of time. i.e. $Y(Q) = f(x_1,x_2,x_3,x_4,.....x_n)$

Y or Q is the level of output.

X1 – Xn are the inputs used in the production process e.g. labour, fertilizers, seeds, drugs e.t.c. The producer must select the best level of depending on the outputs obtained. We note that output is a function of input and this is represented as (f)

The production function i.e. the nature and extent are influenced by

- The amount of resources
- The amount of price of factor inputs
- The level of technology
- The degree of organization i.e. management
- Political atmosphere whether the policies are favorable, stable or not.

The favor inputs are either fixed or variable. The fixed inputs are those which are not used up within the production process e.g. land, buildings, machinery, breeding animals and plantation crops. The variable factor inputs get used up within the production process and include fertilizers, labour, seeds, agro-chemicals (pesticides, herbicides). These can be increased from time to time.

The returns along the production

The returns are expressed as follows;

1. The total physical products.(TPP) this is the total output: this is the total output (yield) produced by combining the factors of production land, labour, capital and entrepreneurship. It's the physical yield that the farmer obtains before analyzing it.
2. The average physical product (APP). This is the output per unit of variable factor input. It refers to the quantity of output that has been produced by each of the units of variable inputs. Its equal to the total output divided by the total variable factor inputs used to the total output divided by the total variable factor inputs used.

   APP $= TotalOutput$

   $= \frac{T}{X}$

3. Marginal Physical product (MPP). This is the extra output produced because of adding an extra unit of variable input i.e. the yield due to the extra worker or hours of work, or extra e.g. of fertilizers.

   MPP $= \frac{change \in totaloutput}{change \in totalinput}$

   $= \Delta y$

   i.e. new level of T.P.P with extra input added minus the previous level of TPP before extra input and the whole thing is divided by the new level of input with the extra unit added minus the previous level of input before the extra unit was added .

   Mpp $\frac{NewTPP - PreviousTPP\Delta Y}{Newinputwithextraunit - Prevoiusinputlevelwithoutextraunit\Delta\Delta X}$

Land is used as a fixed as a fixed factor and labour as a variable factor of production

Land Hectares	Labour (no. of Workers)	Total Product Y TPP	Average Product	Marginal P Product
1	1	5	5	5
1	2	15	7.5	10
1	3	45	15	30
1	4	73	18.3	28
1	5	86	17.3	13
1	6	91	15.2	5
1	7	91	13	0
1	8	87	10.9	-4

Draw a graph showing a relationship between TPP, APP and MPP against labour (X): Find a suitable scale: the y-axis is labeled output and x-axis is labeled labour.

The types of return in farming

These are the relationships between the output and the input used. They can be identified along with the production function and at the same time they appear in different farmers situations.

1. Increasing returns: this is where TPP is increasing at an increasing rate and MPP is also raising. Increasing efficiency in the factor combination such that successive units of inputs yield higher than the previous unit used. Its not a common type of returns.
2. Constant return: (Zero returns). This is where TPP is at the maximum level and MPP is equal to Zero. Efficiency is beyond the maximum and is declining. It's the case anywhere if the marginal product is declining in the farming situation.
3. Decreasing returns: this is where marginal product is decreasing but positive. Each successive of extra unit of input used yields less than the previous unit of inputs, the total product is increasing but at a decreasing rate.
   This expresses the law of diminishing returns which states that "as more and more units of valuables inputs are added to a fixed factor, the output (MPP) will increase but eventually begin declining."
4. Negative returns: This is where the total product is falling and the marginal product is negative. The successive/ extra units of inputs yield negative contribution and this makes the total yield to be declining each time. There's no satisfaction for adding extra inputs, although average physical product may be positive.

Regions of the production function and their characteristics

The production function can be divided into 3 regions or zones;

1. **Region one/ irrational zone**: this is characterized by the physical product increasing at an increasing rate, the MPP and APP also increasing. There's increasing efficiency of factor combination and the factors of production are not maximally utilized. It is therefore irrational to produce at any level in this zone because a lot of returns would e foregone since extra units of input still yield much output.
   It's the case where capital, labour e.t.c are the limiting factors of expansion. Examples include; inadequate use of fertilizers, underfeeding diary animals, use of too little labour which cannot give the maximum yield out of the land or animal.

2. **Region two / Rational zone**
   This is characterized by TPP increasing at a decreasing rate and reaches the maximum level. MPP is falling but is still positive and reaches zero. Average physical product reaches maximum and begins falling. Efficiency of factor combination reaches maximum and also begins to decline. It is therefore rational to produce in this region because it is where efficiency reaches maximum. Examples in daily life experiences include optimum feeding, optimum use of fertilizers, optimum level of labour, optimum stocking rate.

3. **Region three/ irrational zone:**
   This is characterized by the TPP falling such that even the capital inverted may not be recovered. Marginal physical product is negative thus there's no contribution made of additional units of variable inputs.

   APP is falling to the lowest levels showing declining efficiency of each input used. Therefore there is declining efficiency in factor utilization where by the inputs are too many for the fixed factor. Overcrowding, competition, toxicity of fertilizer nutrient have set in. the possibility for improvement is in the expansion of the fixed factors. i.e. moving to the long run.

   Such situations include the use of too much fertilizer, too many workers, over feeding dairy animals or layer or broiler birds. Therefore producing at any level in this region is irrational because there no justification in the use of the factors of production.

What are limiting factors of production function in the following that limit expansion?

i) Region one

ii) Region two

iii) Region three

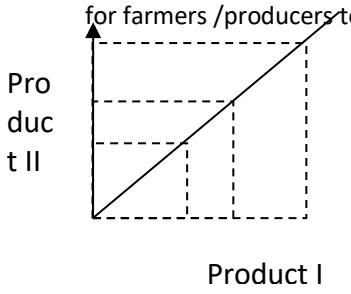
Product – Product relationships and production of opportunities

Opportunity cost refers to what is missed when choice is made among alternatives. It is defined as the value of the next best alternative foregone when a choice is made between alternative activities. Opportunity cost arises because of scarcity of resources to be used in production. Otherwise, all the profitable alternatives would be carried out.

Product – product relationships refer to the way different products affect one another when they are being produced together. The different product relationships include; joint, supplementary, competitive and complementary relationships.

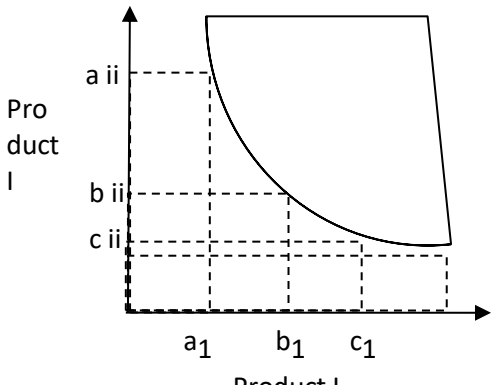
1. **Joint product relationship**

These are the product in which a single process results in out put in two or more useful products. Examples are hides and beef, sugar and molluses, etc because they are produced in fixed propositions. They provide opportunity for farmers /producers to get more income without necessary incurring more costs.



2. **Competitive Products**

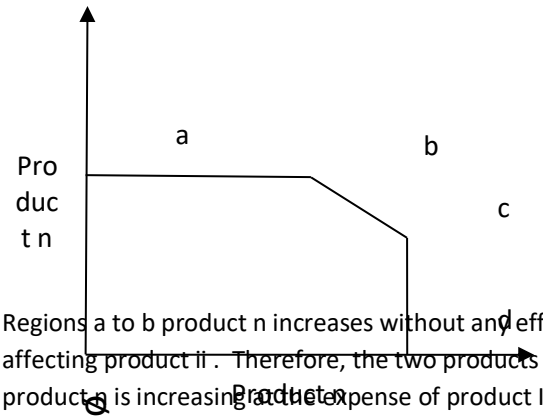
This is a relationship in which increase in one product and necessities for output in another product. Production of such products is only for the sake of diversification but not for maximum profit. An example is where crops and livestock are produced using the same land or any other products where the bi-products of one are harmful to survival of the other.



Increase from **a**1 to **b**1 has caused a decrease from aii to bii and so on.

3. **Supplement products**

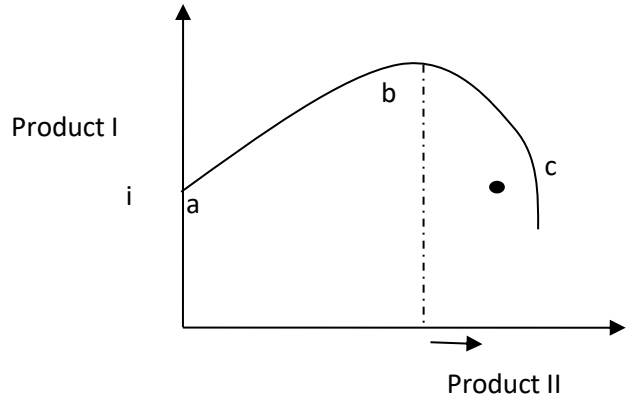
This is where in out put of one product neither increases nor decreases output of the other product. But this is so only in some range but in a long run, the two become competitive e.g. keeping some chicken in the yard of daily cattle or a crop farm. When the poultry increase beyond a certain level, they begin competing for labour and capital with the other enterprise.



Regions a to b product n increases without any effect on product I and regions c to d product I decreases without affecting product ii . Therefore, the two products are supplemental within the two ranges but in the region b to c, product n is increasing at the expense of product I and it is referred to as a competitive range.

4. **Complementary Product relationship:**

This is where increase in production of one product is accompanied by an increase in the production of another one. This also occurs up to some point beyond which the relationship becomes competitive. An example is growing grass and legume crops, pastures together in a field. The legume provides nitrates for grasses but when they overcrowd, one of them will die out.



Region a – b, product n increases us accompanied with increase in product b – c product I decreases as product D increases.

Specialization and diversification as production techniques

1. Specialization/ Division of labour

This is using resources for the production of the commodity or just a few splitting up the tasks involved and allocating them to separate workers each to increase efficiency. Its common with competitive product relationship and also with products with the least opportunity cost, which use resources maximum or intensively. It has the following advantages;

I) It is easier to market one or a few commodities are all the effort is devoted to them.
II) It leads to increased production.
III) Workers acquire greater skills on their jobs
IV) It saves time in the training of operatives or a worker for different jobs i.e. the worker only needs to train for one specific area and this is quick.
V) It makes possible greater use of next machinery
VI) It increases efficiency in the performance of work.
VII) Time is saved in switching form one took to another i.e. time is used per unit of article of the products.
VIII) It promotes the need for exchange, trade and co-operation.
IX) It reduces costs of product per unit due to increased mechanization and skills and volume of production.

Disadvantages

1. Performing the same task, time and again makes the work monotonous which results into fatigue and boredom

2. When a worker leaves a job, it becomes very difficult to get another job elsewhere.
3. It can lead to over exploitation and exhaustion of resources especially in those countries which have concentrated on exploitation of minerals.
4. In case one of the workers is absent, the whole production process comes to stalling.
5. It leads to little or no contact between workers and their employees because specialized workers tend to work independently.
6. Use of machines leads to loss of craftsmanship doing work using hands.
7. Over dependency on others of goods not produced.
8. Some of the useful bio products are wasted like matooke and cattle manure.
9. Failure to utilize resources effectively.
10. It limits the range of commodities available.
11. Income sources are limited and may be seasonal.
12. Regional imbalance economically where regions specialize in an equally.

2. Diversification

This is where several products are produced at the same time or firm. It is common in goods with supplementary and complementary relationships.

Advantages

1. There's spreading of risks over many products such that the failure of one may be compensated by the gain of the others.
2. It increases independence and self sustenance of the individuals or nations because of the individuals or nations because of the wider range of products.
3. It reduces seasonality of income because of producing and selling a variety of products in different seasons.
4. It reduces seasonal unemployment of labour if use of machines because activities can be more spread over the year.
5. It widens the export base of a country and generates more income.
6. It ensures a steady economic growth as it offsets the effects of price fluctuations.
7. There's integration of farm products in the production of income e.g. crop residues used to feed livestock while droppings as manure reducing costs of production.

Disadvantages

1. It is difficult to sell or market various products especially when produced at a small scale.
2. It is difficult to manage efficiently the combination of enterprises on the same firm.
3. Pest and diseases may spread from one enterprise and another if there are not carefully selected.
4. It is difficult to mobilize enough capital and skilled labour to produce maximally for all the products/ requires a wider resource base.

Production costs

During establishment and running of a business, a farmer spends money on items like buildings, machinery, labour and other inputs. The money spent in these operations and activities of production and marketing of farm products is referred to as costs. The various costs are classified as implicit and explicit costs.

The implicit costs are all those costs in which the farmer doesn't pay money directly or indirectly out of the business. They are hidden costs and examples include opportunity cost, cost on family labour, interest for the use of the business owner's capital.

Explicit are all the costs in which the business spends money indirectly such as during transport, purchase of inputs, storage costs, electricity bills purchase of machinery e.t.c the money spent on these various items and operations makes up the following types of costs .

1. Fixed costs
2. Variable costs
3. Total costs
4. Average cost

5. Average total cost
6. Average valuable costs
7. Average fixed cost
8. Marginal costs

1. Fixed cost (FC)

Also referred to as overhead costs. They are costs incurred in obtaining fixed assets and maintaining them e.g. machines, buildings and their maintenance, payment for parliament services e.g. rent, salaries e.t.c. they are experienced usually at the beginning of the business or in expanding the business. They are incurred regardless of whether the business or in expanding the business. They are incurred regardless of whether the business is operating or not e.g. depreciation cost of machinery and buildings. They do not change with the level of production in the short run.

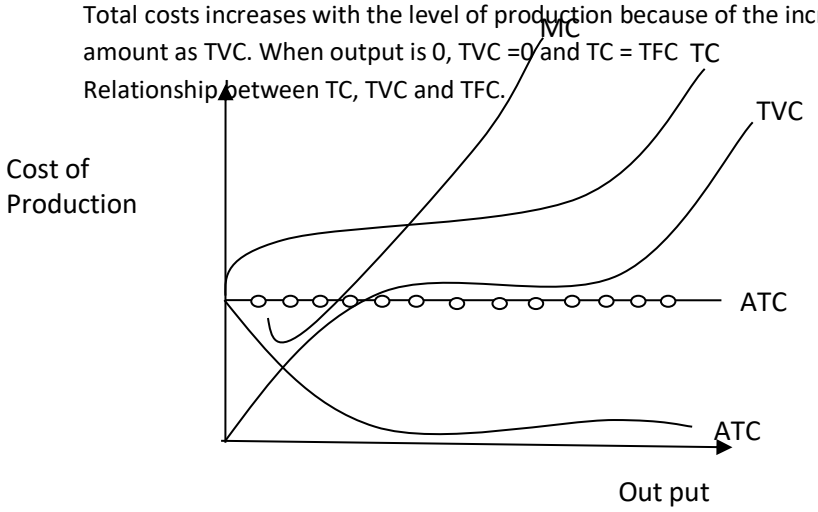
2. Variable Costs. (VC)

These are also referred to as prime costs. They are incurred in obtaining variable factors inputs e.g. wages for labour, cost of seeds, fertilizers, pesticides, feeds and transport. Their magnitude changes with the level of production. (Output). They will change with change in the level of output i.e. can be increased or decreased according to production functions. They are only incurred when the farm is operating or producing i.e. no production no value costs.

3. Total costs (TC)

Total costs increases with the level of production because of the increase in TVC. TC increase by the same amount as TVC. When output is 0, TVC =0 and TC = TFC

Relationship between TC, TVC and TFC.



This is the sum total or the overall cost that the firm incurs in producing its products. It is the sum of variable and all fixed costs used in production of good and services i.e.

TC = TVC +TFC + (implicit costs) where

TVC is total variable costs

TFC is total fixed costs

4. Average cost (AC) μ

This is the cost of producing each unit of output. It is obtained by dividing the total costs with the total output with that level of production. It can be expressed for total costs, fixed and variable costs respectively.

i) Average total costs. (ATC)
This is the value of all the total costs divided by the total output (a) also equal to ATC plus AVC

ii) Average Variable Costs. (AVC)
It is the variable cost used to produce each one of the units of output i.e. AVC = TVC over total output (q)

iii) Average fixed costs (AFC)

This is the fixed cost that is used to produce each unit of output i.e. fixed costs per unit of output i.e. AFC = TFC Over total output (q)

NOTE: AFC reduces with increase in the level of output and this is one of the reasons justifying large scale production.

iv) Marginal Costs (MC)

This is the extra cost incurred by the business in order to produce an extra unit of output. It is only incurred when a business is trying to increase the level of output in the short run. E.g. by employing more labourers, more capital or any other inputs to increased production.

$$MC = \frac{\Delta TotalCost}{\Delta totaloutput} \quad \frac{\Delta TC = presentunitofTC - PreviousUnit}{\Delta q}$$

Table of production costs

Weekly out put	Fixed costs	Variable costs	Total costs	Average costs	Marginal Cost
1	10000	5000	15000	15000	15000
2	10000	10000	20000	10000	5000
3	10000	15000	25000	8330	5000
4	10000	22500	32500	8125	7500
5	10000	30500	40500	8100	8000
6	10000	39000	49000	8166.7	8500
7	10000	48000	58000	8285.7	9000
8	10000	58000	68000	8500	10000

Revenue of a firm (farm)

Revenue refers to the income of the firm obtained by selling its products. Revenue is expressed as total revenue, average revenue and marginal revenue.

Total revenue. (TR) is the total amount of income or money received s a result of selling the total product. i.e. total amount of product produced in a period of time. Its expressed as TR = price x quantity (PxQ) where P is price per unit of product and q is total quantity of product.

Average revenue (AR) is the revenue received per unit of product it's the same as average or unit price. Its expressed as AR = TR/Q (=P) its magnitude is influenced by the level of price.

NB: TR depends on the total product available for sell and the price.

Marginal Revenue (MR): This is the extra or additional income resulting selling (sale) the extra unit of output i.e.

$$MR = \frac{\Delta TR}{\Delta Q}$$

The profit of a business is equal to total revenue – total cost i.e. TR-TC = P. A firm maximizes profit by either

a) Maximizing revenue i.e. trying to get as much product as possible and hence more revenue.
b) Maximizing costs of production i.e. operating the business which as low costs as possible to widen the gap between TR and TC.
c) If demand is elastic, reducing price leads to increased sells.

Variation of amount of labour and Marginal Revenue.

Units of labour	Cost of Labour	Total Revenue	Marginal Revenue
1	6	20	20
2	12	45	25
3	18	75	30
4	24	95	20
5	30	110	15
6	36	120	10
7	42	125	5
8	48	125	0
9	54	120	-5

10	00	105	-15

The Shutdown and the break even points.

The breakeven point is when a firm is neither making profit nor occurring losses, through its solid to earn normal profits. It doesn't add anything to its capital accumulation. This is where price is equal to average cost i.e. P = ATC and the firm covers only its expenses. Such a price is also referred to as the breakeven price.

The shutdown point is a point below which a firm cannot operate. It is where price equals average variable cost i.e. P=AVC. The business cannot recover its fixed costs and when this happens, its advised to stop. However, it can continue producing at a break even point because all the invested money is recovered.

Risks and uncertainties

Risks and uncertainties account for the differences between planned outcomes and actual outcomes of and actual outcomes of a firm.

A risk is a situation in which a future can be predicted with a specified degree of probability. It involves less than perfect knowledge but they have statistical basis on which to have predictions e.g. a 70% possibility or 30% that something will happen.

Risks are either priori or statistical.

A prior risk is a situation in which there's advance information showing the probability that an event will occur.

Statistical risk is where there's observed or empirical evidence or recorded experiences that show that an event will happen.

A risk can be reduced to a numerical value i.e. it can be estimated and therefore can be insured. Risks can be avoided with careful observance in the operation of business enterprises. Risks include; fire, accidents, thefts and robbery, regular unfavorable weather e.g. storm rays.

An uncertainty is a situation where the probability of future outcomes cannot be estimated or established on a statistical or quantitative evidence. It involves decision making with imperfect knowledge: being more distant form perfect knowledge: being more distant from perfect knowledge than risks. Uncertainties cannot be estimated or reduced to a numerical value and therefore can't be estimated. Uncertainties includes:

1. Price of the product: product prices at harvest cannot be determined at planning or beginning of product except in contracts such that one cannot be sure what the price will be at the time of selling.
2. Yield of production uncertainty: the producer cannot be certain on the quantity and quantity of the harvest he will obtain as weather changes, pests and diseases may come in.
3. Performance of new technology/ changes in technology: in taking up new technology, the producer cannot be sure on how it will perform ar whether it will perform to the best. Also when operating in a state of technology, producers cannot be certain whether better technology will not come to at compete theirs e.g. new varieties, new machines and new breeds of livestock or other technics of production.
4. Government policy: producers cannot be sure whether new policies will not come to affect the decisions they have made such as price support, taxation, or burn of some products.
5. Bleach of contract: Agreements made at the time of starting production may change due to death of bankruptcy of parties. The producer will not benefit from his plan/ contract.
6. Change in health of workers and entrepreneurs: Health conditions may suddenly change when there's crucial / bad need or participation in the production process and this may seriously affect production.
7. Reliability of machines, transport means e.t.c: Whether machines and transport vehicles will break down and fall during crucial periods of production and marketing cannot be determined easily.

Measures used to manage or reduce effects of risks and uncertainties.

1. Insurance: Producers pay some amount s of money to the insurance companies so that in the events of a loss due to five, theft, the company will compensate the farmer enabling him to continue with production.
2. Price Support in the government: in case of price fall, the government can pay farmers a price above the market price covering their production costs so that they can produce again.
3. Stabilizing prices by government: Through buffer stocks and stabilization funds to reduce price fluctuations and allow farmers to get prices and closer to their expectation.

4. Producing on contract: farmers should look for and produce on contract terms whereby they agree with buyers on price, time and the quantity to be supplied. This allows the producers to get expected prices and incomes.
5. Liquidity: Producers should keep more liquid assets which will allow them to easily convert the assets to money to enable them carry on production in case of a loss.
6. Diversification: Producing more than one enterprises/ commodities so that in the case of one failing, the producer will be compensated by the other which may not necessarily fail thereby be able to produce again.
7. Input rationing: the producer uses inputs in phases rather than one application so that incase hazards occur before the next phase, the producer will lose only part of the inputs saving some fraction that will enable him to produce again.
8. Selecting more certain enterprises: such as keeping disease and parasite resistant breeds in livestock, growing diseases, pest and drought resistant crops, reduce risks and uncertainties.
9. Flexibility of farm enterprises: Producers design their enterprise in a way that in case of a loss, some of the assets could be easily used in the production of other products. E.g. building and stores being multipurpose in design so that the producer would have a starting point for a different enterprise after a loss.
10. Government sponsored credit/ ability of the producer to borrow capital: Government credit skills enable the producer to carry out production after a loss by providing capital.
11. Irrigation: farmers capable of irrigating crops will enable crops to survive drought and be able to get an income despite rain failure.

Price Mechanism and determination

Prices and relative values of goods and services usually in terms of money at a particular time. Prices are determined by the following;

1. Bargaining (Haggling):
   The buyers negotiate with the producers until they agree on a particular time.
2. Making agreements/ treaties:
   The producers come together and determine the price making an agreement or treaty. It could be a treaty for a certain crop e.g. coffee, tea or other goods like petroleum.
3. Fixing of prices :
   Fixing of the prices either by the government or the sellers. The government may fix prices to a certain maximum and minimum at which goods and services may be sold. Even organizations may do it on their goods/ services. E.g. supermarkets. This method prevents exploitation and produces by the shroud consumers e.g. middlemen but it gives rise to smuggling and black marketing.
4. Sales auctioning: this is where sellers invite bidders to propose the price at which they are willing to buy. There's always one seller and bidders are many competing. The one that gives the highest price is the one that lakes the commodity or service.
5. Forces of demand and supply:
   The quantity demanded and the quantity supplied on to the market determines the price of particular commodity. A commodity whose demand is high and supply is low has a high price. A commodity whose demand is low and supply is high price. A commodity whose demand is low and supply is high has a low price.

Money is used as an indicator of measure of the prices.

Demand

This is the desire to process goods and services. Effective demand is the quantity of a product which the buyers are ready o pay for at varying prices at a particular time. The ability to buy goods and services is the purchasing power which is a factor of money or wealth.

Law of demand

This is the principle that states the relationship between price of a commodity and the quantity of that commodity that is bought, it states that "the lower the price, the more of quantities will be demanded i.e. bought ceteris paribus and vice versa.

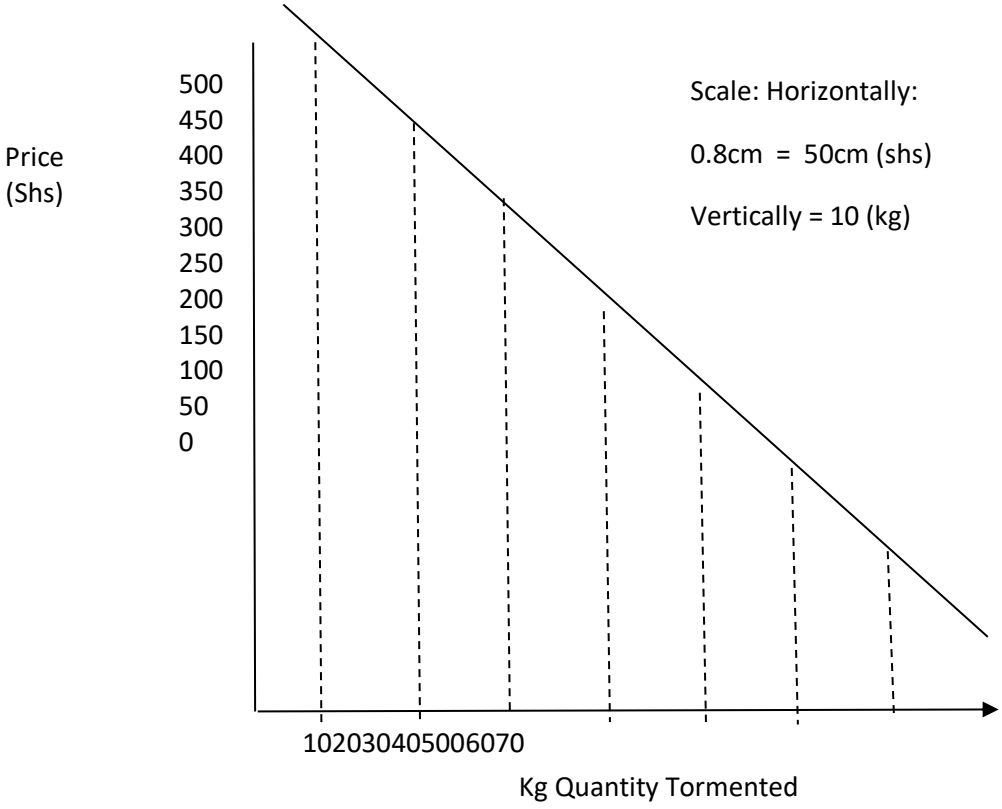
Demand schedule

This is a list of quantities of a commodity bought at varying prices in a period of time. It illustrates that when prices are low, more is bought and vice versa.

Prices (Shs)	Qunatity
500	10
450	20
400	30
350	40
300	30
250	60
200	70

When this information is plotted on a graph of price against quantity demanded. It gives what's known as a demand curve. A demand curve is a graphical relationship between the price of a commodity and the quantity of that commodity bought at varying prices. Normal demand curves slope from the left to the right i.e. showing that the quality demanded increases when price falls.

Demand curve of price against quality of a commodity.

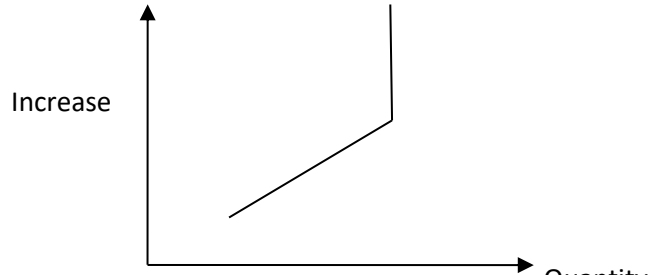


Exceptional demand Curve

This is the demand curve that does not confirm to the law of demand curve. It slopes from the right to the left i.e more of the quantity is bought when the price decreases. It is also referred to as up sloping curve. Such demand curve is for goods like;

1. Goods of ostentation: which are bought only to impress the public and show ones wealth. E.g jewelry

2. Giffen goods; these are goods that constitute a very big part of ones income such that when price rises, the consumer tends to buy more of it giving up others and buys less of it when price falls because he returns to the others which he had stopped consuming



3. When price is expected to increase; when people expect shortage of a commodity and therefor increase in its price, they will buy more of the commodity even with increasing prices and this also leads to an upsloping demand curve.

Law of diminishing marginal utility

This states that As more of the commodity is consumed. Its marginal utility declines. The consumer is willing to pay less for extra units of that commodity and he will buy more if the price is decreased. Utility is the satisfaction obtained from the consumption of a commodity i.e. the satisfying power of a good or service to the consumer. Marginal utility of a good is a change in the total utility due to consuming one unit of the commodity. The 1st unit of a commodity has the highest utility and the consumer is prepared to pay the highest price.

Factors that determine demand for a commodity

1. Price of the commodity; when the price of a commodity falls, consumers buy more but less of the commodity is bought when its price rises.
2. Price of related goods; (substitutes); Increase in the price of substitutes of a commodity increases demand of a commodity in question if its price remains low and vice versa.
    a. For complements; when their prices increase, the demand of a given commodity that complements it decreases because the 2 are consumed jointly e.g. the demand for tea leaves is lowered when the price of sugar goes up and vice versa.
3. Income of consumers; a rise in the income of consumers increases the demand for normal goods but lowers the demand for inferior goods.
4. Number of consumers in an area/ size of population; the bigger the population of consumers the higher will be the demand for commodities and services.
5. Structure and composition of the population; the age and sex structure of the population affects demand. A high proportional of young to mature people increases demand for milk, eggs, meat while more women to men increases demand for matooke.
6. Tastes and preferences; different people have likes they prefer e.g. young people, religious people and these influence the demand for those commodities.
7. Culture, traditions/ beliefs; people beliefs on a commodity will either raise or decrease its quantity demanded e.g. a high number of muslims in an area decreases the demand of pork.
8. Seasons/ festivities; certain seasons increase demand for certain commodities e.g.. dry seasons for cold drink, cold season for hot drinks e.t.c
9. Consumers expectation of future prices; more of a commodity will be brought if consumers' expectancy arise in prices and vice versa.
10. Advertising; increased advertising raises demand for a commodity advertised.
11. Level of education; highly educated people or a population with more educated people has higher demand for luxury goods e.g. eggs, milk e.t.c than the populations with uneducated people .
12. Government Policy: Government may encourage/ discourage demand of goods and services and this increases or decreases demand for the conserved goods and services.

13. Taxation: taxes on commodities rise their prices and hence reduce their demand. Also when government reduces taxes in a commodity or its inputs, (subsidizes it) the prices for the commodity may reduce generally increasing demand for the commodity.

Change in demand

This is where there's an increase in demand of a commodity or decrease in the demand for commodity when the price for the commodity is kept constant. Its referred to as a shift in the demand curve. Demand of a commodity may increase in the following conditions:

1. Increase in consumers income
2. Favorable taste
3. Rise in the price of a substitute(s)
4. Fall in the price of complements
5. Unexpected rise in the future price of a commodity
6. Increase in the size of the population.

A decrease in demand is caused by the opposite if the above factors e.g. a decrease in a consumer income decrease in the price of complements e.t.c

NB: substitution effect is the rate at which one commodity is substituted by the other if the price changes.

Real income effect is a change in demand of commodity due to change in the income of consumers. Real income is the money income over price of commodities. It is the actual quantity of goods bought from the money income. The real income of a consumer increases when a price of a commodity decrease and vice versa.

Elasticity of demand (ED)

Elasticity of demand is referred to as the degree of responsiveness of demand to a change in the determinacies of demand i.e. it's the extent to which demand of a commodity changes in response to a change in the determinacy of demand like price, income and other factors. Therefore we have price elasticity of demand, income elasticity of demand and cross elasticity of demand.

Cross elasticity of demand refers to the degree to which demand of a commodity changes due to changes due to changes in price of substitutes and complements

Income elasticity of demand refers to the degree to which a demand of commodity changes due ti the change in the consumers income.

Price elasticity of demand refers to the degree to which the demand of a commodity changes due to changes in prices.

$$ED \frac{\%change \in quantitydemanded}{\%change \in determinante.gpriceincome}$$

Thus, Price ED = $\frac{\%\Delta quantitydemanded}{\%\Delta priceincome}$

Income ED = $\frac{\%\Delta quantityDemanded}{\%\Delta income}$

Cross Eab = $\frac{\Delta QuantityA/QuantityAx100}{\Delta priceB/priceBx100}$

Quantity A refers to the original quantity and Price B refers to original price . e.g

If the price of maize rises form 400 – 450 shs per kilo,resulting into the demand fallingfrom 60 – 50 kg. calculate the price elasticity of demand for maize.

$$priceED = \frac{\%\Delta quantitydemanded}{\%\Delta priceincome}$$

$$\frac{60-50}{450-400} \text{ V } \frac{50-60}{450-400}$$

Price ED = 0.2 = 20%

$$p2 - p1 = 450 - 400$$ p1=450-400

=50

$$PriceED = \frac{16.67}{12.5}$$

= 1.3%

$q2 - q1 = 50 - 600$

-10

$$\%\Delta\in quantity = \frac{10}{60} x100$$

= 16.67

$$\%\Delta\in price = \frac{50}{400} x100$$

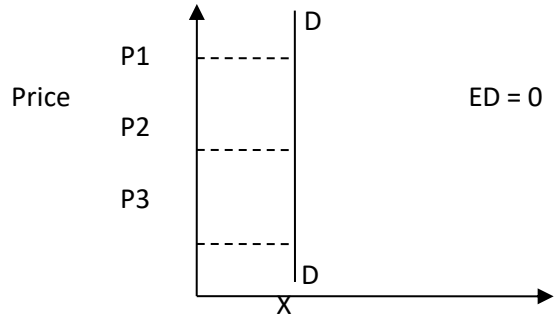
= 12.5

Types of Elasticity of demand

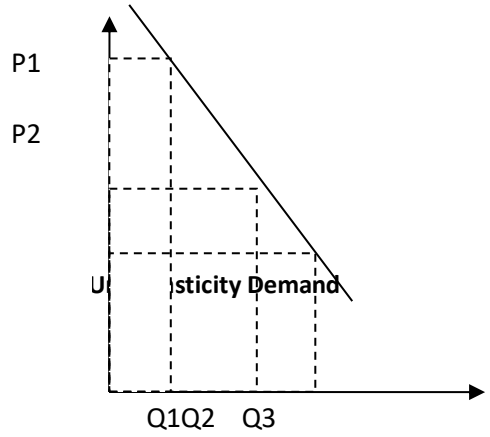
There are different types of elasticity i.e. perfectly inelastic demand. Inelastic demand, unit elasticity demand, perfectly elastic demand and elastic demand.

1. **Perfectly inelastic demand:**
   This is where elasticity of demand is equal to zero meaning that a change in price o income e.t.c has no effect on the quantity demanded. Its common with essential products like salt.

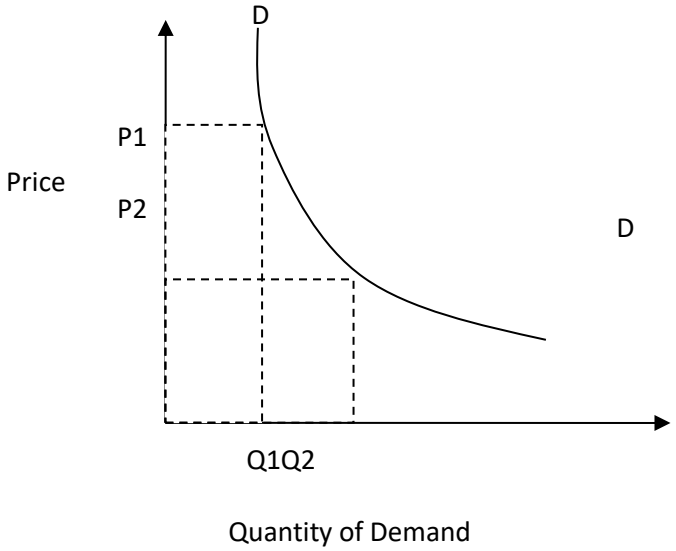
Is g



2. **Inelastic demand**
   This is where elasticity is greater than 0 but less than one. A change in price or income etc. results in a less than proportionate change in the demand of the product. Such is common in cigarettes, food items alcohol. E.t.c

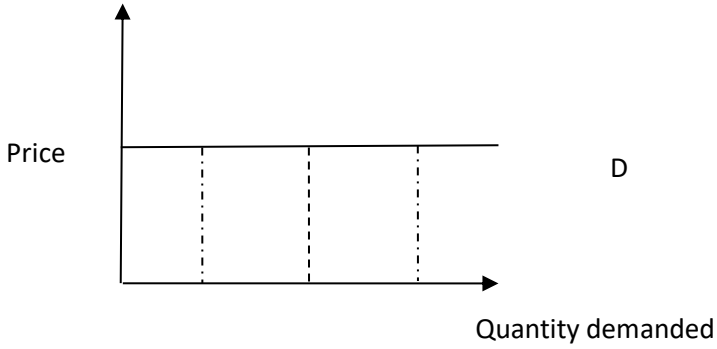


This is when the elasticity of demand is equal to one. A change in price results in a proportionate or equal change in demand and the curve of graph produces a rectangular hyperbola. Its common with goods between necessity and luxury.



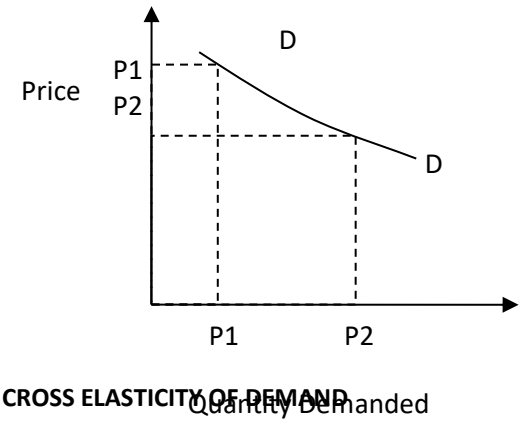
4. **Perfectly Elastic demand**

This is where elasticity of demand equals infinity. Its where the price of the commodity remains fixed at all levels of supply and demand. It's the case where there are many producers of the same product or where the government fixes the prices.



5. **Elastic demand**

This is where elasticity of demand is greater than one. A change in price or income leads to a more than a proportionate change in the quantity demanded. This is a case where commodities closely substitute for one another.



CROSS ELASTICITY OF DEMAND

This is the relationship between a change in price or income and the resulting change for in demand for related products. These are complements or substitutes complements are said to be so if the demand for the good varies inversely with price of its complement should have decreased and vice versa.
commodities are substitutes when the demand for a commodity varies directly with the price of the substitute. i.e. if demand of commodity **A** increases, the price of **B** its substitute should have increased and vice versa.
When the ratio has been calculated between the prices and quantities demanded, when the ratio is positive, the commodities are substitutes and when its negative, the commodities are complements and when its 0, the commodities are unrelated and independent in their consumption patterns.

Factors that affect elasticity of demand

Elasticity of demand is determined by the following:

1. The proportion of income spent on a commodity: Goods which consume ones a lot of income have elastic demand and those which consume very little income spent have inelastic demand i.e. a change in price of a commodity will cause a big change in the demand if the proportionate income is large and vice versa.
2. Necessity of the goo: An individual continues to consume quantity of essential goods regardless of price changes and the demand is elastic.
3. Availability of substitutes: A commodity with many substitute has elastic demand because when price increases, consumers change to others and demand deceases. Goods coat substitutes have inelastic demand.
4. The number of uses the product can be put to: If a commodity has many uses. Its demand is fairly inelastic because a full in its price may not lead to a much bigger change in its consumption but a product that has fewer uses, a change in price will lead to a greater change in quantity demanded.
5. Consumers income: Rich people like inelastic demand while people the low income have elastic demand . They look for cheaper substitutes when prices rise.
6. The time-period: Demand is more elastic in the long run and inelastic the short run.

APPLICATION OF ELASTICITY OF DEMAND

- The government makes use of it to increase its revenue by increasing taxes on those commodities whose demand is inelastic eg cigarettes, bears and petrol.
- Producers and sellers increase their sales and profits by reducing the prices when their commodities have elastic demand.
- Monopolists will maximize profits by charging more/ high prices on goods whose demand is inelastic.
- A country increases the volume of exports by devaluing its currency when the demand for the exports is elastic.
- A supplier of inferior goods tries to keep his prices low when the consumer's income rise.

Trade unions use the knowledge of elasticity for labour being inelastic to demand for higher wages

SUPPLY

The quantity of commodities offered for sale at a specific price at a particular time.

Low of supply:

The relationship between price and supply. It states that; the higher the price, the greater the quantity of the commodity will be supplied and vice versa.

Supply schedule:

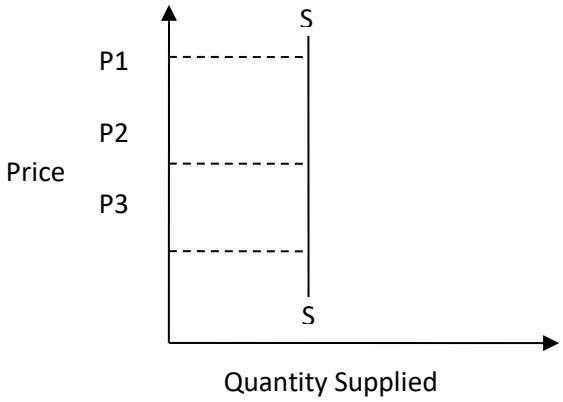
This is a list of prices and their respective quantities supplied for a period of time.

Prices {shs}	Quantity supplied {kg}
200	10
250	20
300	30
350	40
400	50

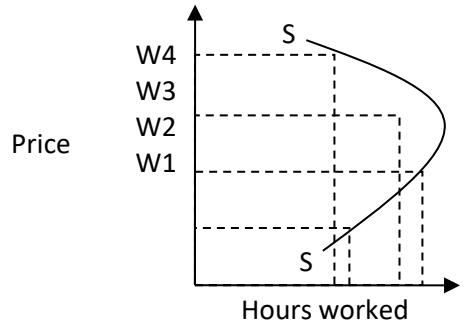
450	60
500	

A graphical representation of this relationship between price and supply (supply curve) for normal goods rises from the left to the right, showing that the quantity supplied is directly related to price increase. Exceptional supply curves include:

1. Fixed supply curve for plantation crops in the short run.



2. Labour supply referred to as regressive curve. It shows that despite higher wages paid, less hours may be worked per day possibly due to frequent hangovers, workers taking time off to monitor their own investments. This is so when wages are increased but not to the living wage level.



Factors that influence the quantity supplied

1. Price of the commodity:

The higher the price of a commodity, the producers will be encouraged to offer their commodities for sales vice versa, it's true.

2. Price of substitutes:

When the prices of competing commodities change more profitable to produce the commodity whose price is high reducing the production of the one whose price has fallen.

3. Price of complements:

Joint products; when the prices of commodities consumed change price, the supply of both of them will increase and vice versa.

4. The cost and availability of factors of production; where the cost of factors is low i.e. availability is high, the commodity with which the factors are used will be supplied in large quantities if the other factors are favourable, vice versa is true.

5. State of technology; Efficient technology leads to increase in the quantity of the technology supplied e.g. availability of improved crop varieties and livestock breeds has increased the production of farm products.
6. Climate and weather; favourable weather conditions increases supply agriculture commodities while unfavourabe weather reduces the supply of products.
7. Government policy. Policies like taxation and subsidization affect supply. Increased taxes reduce supply while subsidize increase supply of goods.
8. Number of producers; if there are many producers of a given product. Its supply will be high and where suppliers are few, the quantity supply is low.
9. Gestation period of the product; the shorter the production cycle of the product, the easier its to increase or decrease its supply and vice versa.
10. Freedom of entry of firm into production; supply is likely to be high with high freedom of entry than otherwise.
11. Political stability/ instability; political instability like wars discourage investments and therefore reduce supply of commodities. Stability increases production of goods and services.
12. Efficiency of transport means; efficient means of transport increase supply of goods into a market form the producing areas while poor means make it difficult to supply goods.
13. Future price expectations; when producers expect an increase in prices they are encouraged to produce more and will produce less when a fall in price is expected.

Elasticity of supply

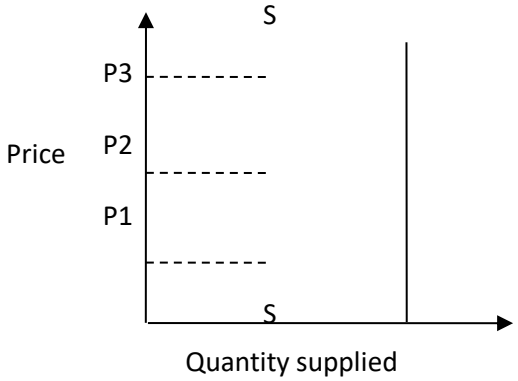
The degree of the responsiveness of the quantity supplied of the changes in price of the changes in price of the commodities offered for sale.

Es $\frac{\%changeofquantitySupplied}{\%change\in price}$

In most cases elasticity or supply will be positive.

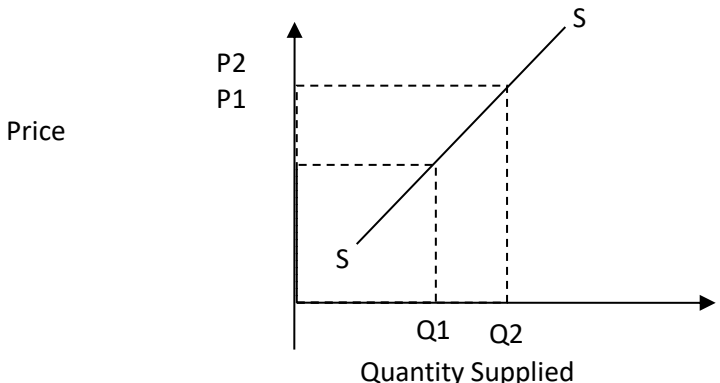
1. **Perfectly inelasticity supply**

   Elasticity of supply equals ∞ and it's common for agricultural products which can't be increased or decreased in a short run.



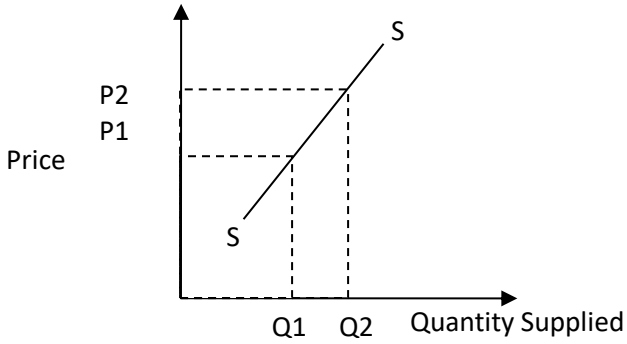
2. **Inelastic supply**

   This is where a big change in price resultants into or change of small quantity supplied i.e. quantity is less proportional to change in price. Its common for perishable products.



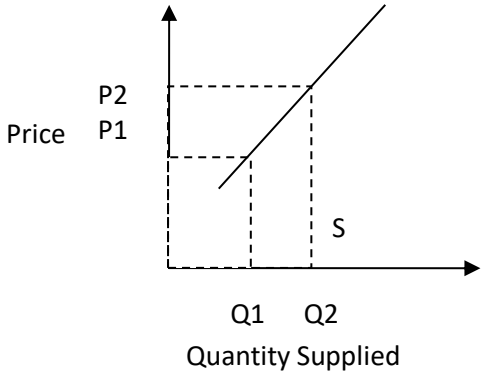
3. **UNIT ELASTICITY OF SUPPLY**

Elasticity equals one. It's where a change in price results into a proportionate change in quantity supplied. This is a case for a short manufactured good production cycle.



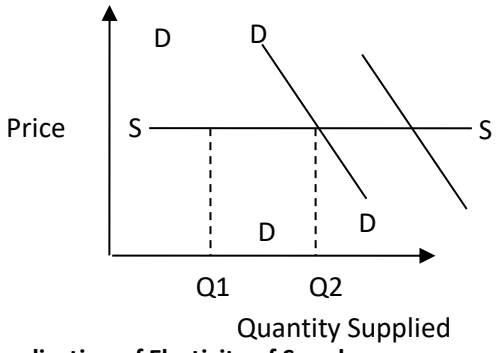
4. **Elastic supply**

Elasticity of supply is greater than one. Its where a change in size results into a more than proportionate change in the quantity supplied. It also characterizes commodities a shorter production period.



5. **Perfectly elastic supply.**

Elasticity of supply is equal to infinity. The quantity supplied increases without a change in the price at different levels of demand. Case where the state controls the prices.



Application of Elasticity of Supply

1. Producers of goods with elastic supply will reduce the prices to sell off their commodities when conditions are unfavorable .e.g. in excess supply.
2. Producers of goods with inelastic supply can get better prices when the hoard/ store their commodities in order to get high prices and profits because supply will not easily increase when prices increase. At the same time, they can't produce commodity prices aiming at selling more.

Factors that influence elasticity of supply of product.

Whether the elasticity of a commodity changes greatly following price; whether the quantity supplied changes greatly or not, such that elasticity is elastic or unitally depends on the following factors;

- Costs and availability of factors of production; when the costs of factors is high i.e. they are less available, the supply of the commodity they are used to produce is low i.e. inelastic and when the cost of the factors of production is low, supply will be mere elastic because people will easily increase supply when the prices increase.
- Nature of product; Perishable products have inelastic supply than the durable products. Because the producers fear increase the price fall durable products. Because the producers fear incase the price fall as their products be stored.
- Gestation Period: Products with short production cycles have elastic supply while products with long production cycles have inelastic supply; because whereas producers will easily increase supply in the short period, its very difficult to increase supply for products that require more than 6 months to produce regardless of how much change there's in price.
- Technique of production; Products that require simple technology have elastics supply because many people can afford to produce them when prices increase products that need complex technology have inelastic supply.
- Ease of entry of new suppliers in the market; where the industry for producing a commodity is open, its supply is elastic and vice versa where the freedom of entry is restricted.
- Influence of time; supply of commodities is perfectly inelastic in the very short run, elastic in the long run, elastic in the long run because the a very short run is impossible to mobilize the production of goods but in the long run, almost all producers can afford to mobilize resources of the supply of goods.
- Existence of space capacity; if the capacity of a firm has more capacity to increase production. Its commodities have elastic supply.

PRICE DETERMINATION BY SUPPLY AND DEMAND

Market price is determined when demand interacts with supply such that when demand is greater than the quantity supplied, the price tends to increase. When supply is higher than the quantity demanded, price of the commodity tends to decrease. A market price is that price which prevails on the market for that commodity. It may be an agreed price between the producer and the buyer or fixed by the government. This price is referred to as equilibrium price when the quantity demanded equals the quantity supplied. It happens at the equilibrium point. When the quantity demanded at various prices is plotted together on the same graph with the quantity supplied at various prices, the point of intersection of these two curves. (Supply and Demand Curves) is the equilibrium point corresponds with the equilibrium price.

Price (Shs)	Quantity Demanded	Quantity supplied (Kg)
20	5	100
18	10	90
16	20	80
14	30	70
12	40	60
10	50	50
8	60	40
6	70	30
4	80	20
2	90	10

Draw a graph to show quantity supplied quantity demanded – against price.
On a graph paper

Other factors that influence the price of a commodity

1. Taxation / subsides; taxes tend to increase the price of a commodity while subsidies tend to reduce the price of a commodity.
2. Number of supplies in the market; when producers / suppliers of a commodity are many, quantity supplied tends to increase and the prices tend to be fairly low – compared to when suppliers are few or one.
3. Quality of the product; high utility of a commodity is low, then its demand is low and the price offered also decreases and vice versa.
4. The state of demand; when the quantity demanded is high and the supply of the commodity is low then its demand is low and the price offered also decreases and vice versa.
5. The state of demand; when the quantity demanded is high and the supply of commodity is low, the price raises, when the demand is low and supply is high the price falls.

Market Structures

A market is a situation that makes it possible for sellers and buyers to interact and decide the terms of exchange of goods and services. Its characterized by goods and services being exchanged presence of consumers, suppliers and medium of exchange. Market structures and price include perfect competition and imperfect competition market situations like monopoly, oligopoly, duopoly, oligopoly, monopoly.

1. **Perfect Competition Market:**
   This is where there are very many sellers and buyers in the market but each of them handles too small quantities to influence the market price alone.

- There's free entry and exit to ensure large numbers for free competition.
- There no government intervention and prices are determined by supply and demand.
- There's perfect knowledge on the part of consumers and producers about the market conditions
- Good quality products are produced because of competition.
- Fair prices charged as there's limited or no price discrimination.
- More commodities are produced
- Demand is very elastic.
- Low profits are earned by the sellers as overcharging is not possible.

2. **Monopoly;**
   This is where there's a single seller or producer of a commodity without a close substitute. Entry into the market may be blocked.

- Huge profits are made by the sellers but poor quality products may be produced.
- The sellers overcharge the consumers
  Monopsony is where there are several sellers with one consumer or buyer.

3. **Oligopoly;**

This is where there are a few suppliers or producers of commodity each with large enough quantities to influence the price. Where there are only a few buyers with many sellers, the market situation is oligopoly.
Perfect oligopoly is where the firms deal in homogenous products while imperfect oligopoly is where the firms deal with differentiated products.

4. **Duopoly** is where two producers exist with many buyers and duopsony where there are two buyers with many producers. Oligopoly has the following advantages:

- Prices tend to be fairly low than in monopoly.
- Research is often carried out to produce good quality products

- They offer after sale services
- They carryout informative advertising to educate the consumers.
- They make more profits which enable them to increase investments unlike in perfect competition.

Disadvantages

- Prices are higher than in perfect competition market.
- They may lead to some misuse of resources as resource utilization is not as better as in perfect competition.
- It's possible for oligopolies to come together and increases prices unlike price unlike perfect competition market

MARKETING OF AGRICULTURE PRODUCTS

It's the process of transforming produce to the place, to a form and time in which they are required by consumers. These transformations are achieved by the marketing function which includes;

1. Assembling/bulking: collecting the produce into one place for easier transportation, packaging, storage e.t.c
2. Grading/ sorting: Products are grouped into grades according to size, color, taste e.t.c for easy pricing and selling.
3. Packaging: products are put in containers of appropriate size, designs and hordes it's an important function due to the following:

- Labeling to give the necessary information concerning quality, quantity packed and instructions for use of the products.
- Weighing so that different weights can be available making it easy for consumer's needs. This also saves time during selling.
- Protection against damage by weather, spoilt organisms, handling, and transportation.
- Facilitating handling: commodities that are liquids and gases are difficult to handle unless they are packed in containers because they have no shape but of the container.
- Quality Control; its difficult to contaminate and substitute or adulterate packed produce therefore, quality is maintained up to the final consumer.
- Advertising: Catch words for advertisings could be written on the packet or labels on containers. Packaging also makes the product attractive if the labels are designed well.
- Storage: well packed produce are easy to store and keep for longer periods than the unpacked ones especially the perishable ones like milk.
- Storage: well packed produce are easy to store and keep for longer periods than the unpacked ones especially the perishable ones like milk.
- Easier selling: Packaging facilities selling of commodities especially in self-service shops.

5. Processing: This is transforming the produce changing their form physical to serve consumers, tastes, reduce the bulk of the product; increase the storage life of the product, standardize composition e.g. in terms of nutrients and therefore increase the valve of the product.
   Processing allows the producer to get by products which can be sold to increase his income or be recycled for use on the farm. It increases income and also employment on the firm.
6. Financing; this is providing capital necessary to transform the produce in form, time and place to satisfy the consumers wants and even earn more income when stored and released when the demand is high.
7. Transportation: Moving the products from the place where they are produced to where they are needed satisfying the location/ place utility. This is satisfied when the means to transport are affordable, efficient and reliable.
8. Storage: Keeping produce in suitable conditions to preserve them from deterioration in quality. It helps to reduce fluctuations in prices as it regulates the supply of commodities to the market, satisfying the time utility. It reduces supply of commodities to the market, satisfying the time utility. It reduces supply during periods of pretty and release the products when they are getting scarce.

9. Market research/ information; this is obtaining/ looking for information regarding price changes, state of marketing demand, locating the buyer e.t.c. care must be taken that the information is accurate, reliable and useful showing all the details on the commodity required. It's also referred to as market intelligence.
10. Advertising: This is creating awareness in the public about the products to influence their attitudes towards the product. It helps to increase demand for the commodities, advertised but may decrease demand for the substitutes i.e. it increases demand for commodities advertised and their complements.
11. Risk bearing; This is putting measures to guard against or reduce losses such measures include insurance, contract producing, maintaining security during marketing.
12. Selling: Involves bargaining for better prices and then exchange of the products for money or the agreed terms.

Problems facing marketing of agriculture produce.

Problems associated with production and marketing of agricultural products include;

1. **Seasonality of Agricultural Products**: Agricultural products can often be available in certain seasons and not others depending on climatic conditions of areas. This causes them to be plentiful in some seasons and very scarce than others.

2. **Long gestation periods:** All agricultural products require several month to be produced once the market get there are many changes especially in price from planting to harvesting that may make produce fail to realize that may make producers fail to realize their target.

3. **Perishability:** Some products deteriorate in quality rapidly after production like milk, fruits, vegetables and need to be sold shortly after harvesting such that when price falls at harvest, it cannot be stored to wait for better prices.

4. **Bulkiness/ lack of processing:** Most agricultural products have high volume and mass with low value per unit of weight or volume in their raw state. They are difficult and expensive to transport and even store.

5. **Limited Elasticity of demand:** The demand for most agricultural products is fairly inelastic such that in the high production, even decreasing the price will not lead to increased consumption therefore the producer may totally lose.
6. **Price fluctuation:** Prices of agriculture products tend to be unstable rising when supply reduces after planting and during the growing season, then falling during and after harvest when supply is plenty. This makes it quite unpredictable what the price would be after the harvest whether it would be favourable or not.

7. **Low quality of products:** There's variation in quality of agricultural products due to unreliable weather conditions, pests and diseases, difference in varieties. This makes products fail to conform to international consumer requirements for exploit, even expected prices may not be obtained locally.

8. **Lack of good storage facilities:** This makes it difficult to keep and preserve produce for long to wait for better prices and regulate supply on the market.

9. **Difficult transport means:** Most Agricultural production occurs in rural areas and the roads that lead to and from there are impassable in some seasons of the year making it difficult or impossible and expensive for transport produce to distant markets.

10. **Lack of adequate market information:** Many dealers/ producers produce not responding to marketing demands. Some producers also sell without knowing the market trends and conditions and end up selling cheaply.

11. **Inadequate Financing:** Lack of enough funds to carryout processing, storage and transportation. It is difficult for them to benefit from distant markets.

12. **Lack of marketing organization:** There are many small producers each of them incapable of selling external of distant markets and the farmers end up failing to sell or selling cheaply.

Fluctuations in prices of Agricultural Products

This is the rising and falling or instability of product prices in a given period of time. It's caused by the following factors;

1. Perishability of products; Perishable products cannot be stored for long therefore their supply can't be regulated once it's excess and it's not easy to produce more when the supply is low. Consequently prices tend to be high before harvest and low after harvest.
2. Seasonality; due to low levels of technology, the seasons dedicate that products are available in some seasons and scarce in others and this influences the prices being low when supply is plenty and very high when scarce.
3. Long gestation periods; it's difficult to increase supply of agricultural products in a short run or decrease it such that when prices are high due to low supply there's hardly a solution and vice versa.
4. Inadequate storage facilities; producers fail to regulate supply of produce after harvest and release more than is demanded causing prices to fall.
5. Inelastic demand especially for food stuffs; peoples consumption levels are fairly fixed such that supply below the saturation point of consumption when prices rise i.e. people will not consume more because prices have fallen or less when prices have run up.
6. Bulkiness; it makes it difficult to transport products to markets with rise or fall of product prices.
7. Changes in supply of goods: Hazards like drought, frost, storms, pests and diseases reduces yields and therefore low supply leading to high prices while favourable weather conditions reduce price hence increased yield of supply
8. Large number of small scale producers/ lack of marketing organization; many different small scale producers sell at different time depending on their needs for money therefore supply is not controlled such that home time is very high and at another is very low and this leads to fluctuation in prices
9. Limited state involvement in price control/ lack of price control measure: government sometimes subsidizes agriculture inputs to reduce cost of production and therefore increase supply , it may also fix prices or operate stabilization funds e.t.c to keep prices stable, lack of these measures encourages fluctuation of prices.

Measures to stabilize prices of Agriculture

1. **International Commodity agreement:** Organizations are set to lobby buyers and producers to agree on prices and quarters for commodities. This regulates outputs avoiding over production/ excess supply on the market. E.g. international coffee/ tea agreement.

Producing on contract: A producer agree with a buyer on the price, quantity and time for the supply of goods. The producer is assured of getting the price agree upon if there's no bleach of contract.
Buffer stocks: the government buys part of the supply when output is in excess, stores this surplus and later sells it to consumers when supply is reduced. This keeps prices at a fairly prices at a fairly constant level by keeping the supply steady.
These have problems and limitations as they need a lot of capital to carryout. It also limits farmers from benefiting from high prices although they are prevented from falling/ low prices. They need adequate market survey in order to predict prices well. They only work when there are bumper harvests.

Stabilization funds: Government sets up funds in marketing boards to raise prices for producers when the market prices fall or maintain them when they are trying to rise. This is achieved by the board giving produces slightly lower prices than what is offered in open markets so that they keep part of the profits gained when they sell at higher prices on the world market. This profit is later used to top up prices for producers when prices on the open markets fall below the prices offered by boards. This stabilizes prices and incomes of consumer as constant prices are produced by the board always. This fund is limited by lack of perfect knowledge of market trends, government indifference / failure to involve in business in favor of liberalization and privatization as in Uganda, government money may be easily and diverted by individuals causing failure of the scheme. It may lead to exploitation of farmers by paying them less prices constantly.

Price legislation: The government fixes minimum and maximum prices for commodities and this ensures that prices do not fall or rise beyond these limits reducing the effects of fluctuation.
Diversification: carrying out a variety of enterprises helps to stabilize incomes though not the price of commodities. When prices for one commodities falls a farmer benefits form another commodity whose price may remain or rise and may continue to get reasonable income to continue producing.

Improvement of storage infrastructure: this allows producers to regulate supply of commodities on to the market avoiding excess supply and shortages and therefore keeping the prices fairly uniform/ stable.

Formation of co-operatives/ organizations: This increases farmers bargaining power for better prices, enables them to get credit for storage, production, processing e.t.c, get market information to plan their production e.t.c.

Improvement of transportation facilities: This allows the produce to be transported from areas of plenty to areas of shortage so that fairly uniform prices are obtained/ pain.

Price support/ subsidizes: price support is where government pays farmers the difference between the market price and the farmer's breakeven price – subside is where the government reduces the cost of production for certain commodities. These reduce the effects of price fluctuation allowing farmers to produce again or increase supply.

Effects of price fluctuations

- Fluctuations make it difficult for government and farmers to plan because the financial inflows become unpredictable.
- The government and the farmers fail to meet their budget estimates/ expectations due fluctuating income.
- Producers are discouraged from borrowing for fear of defaulting in pegments as the incomes become unpredictable.
- Producers become discouraged from investing and therefore producing certain commodities which may lead to shortage of certain products
- Employment opportunities also fluctuate as people get discouraged from investing
- Fall in prices may lead to failure of the farmers to sell when the prices are low.
- Raise in prices encourage many people to produce leading to over production.
- Raising prices enable the farmers/ producers to benefit from high profits.
- It increases income in qualities between primary producing sectors and the other sectors of the economy. It may result urban migration due to poor performance in the agriculture sector.
- A country may have its economy over depending of foreign aid.

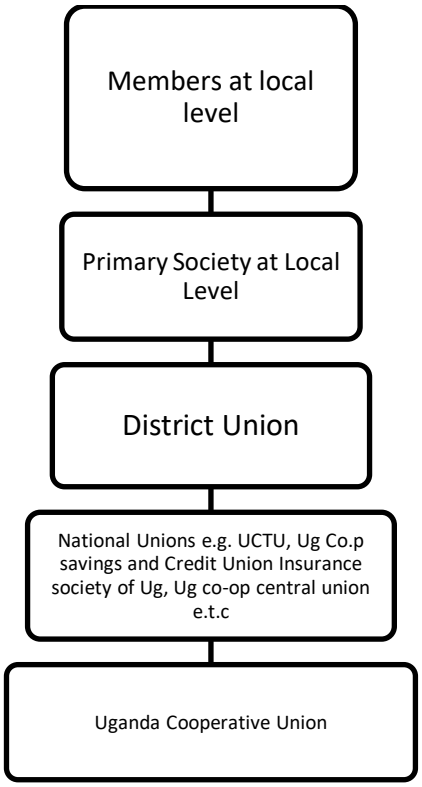
CO-OPERATIVE ORGANISATIONS

A co-operative is an organization set up voluntarily by people with common interest and objectives. It's owned by the members who control it, manage it and use it to improve their conditions. It obtains its income / capital from

member's shares and contributions or from the services it renders to the public or from donations or government. The primary goal of the co-operative is to meet the needs of its members in an in economical and efficient way. It's registered as a society according to the co-operative act 1970.

Types of co-operatives

- Producer co-operatives: these are formed by producers to enable them produce and market their products easily.
- Consumer co-operatives: these are formed to make the supply or consumer goods easier by buying in bulk and transporting together which becomes cheap.
- Transport co-operatives: these are formed by transporters who come together to fight for their rights and coordinate their transport services delivery. These are under the Uganda cooperative transport union (UCTU).
- Credit and Saving Co-operatives: These are formed by members to save and to themselves in order to accumulate capital and improve their conditions.
- The functions of cooperatives are as diverse as possible depending on the activity that members are interested in and the services they can render. The functions range from insurance services, supply of inputs, processing of produce, transport services, banking services, credit facilities, business education of the members, advice on producing.
  All co-operative societies fall under the umbrella of the Uganda cooperate alliance.
  Cooperatives used to have the structure as below:



Principles of Co-operatives

These are the guidelines and distinguishing features of cooperatives;

- Open membership: the public members are free to join co-operatives on a voluntary basis all that have interest are responsible citizens are free to join. Joining and leaving the cooperative is voluntary except in cases of indiscipline.
- Democratic control: Election of members and decision making should be on the basis of one member, one vote emphasizing equality of members and not basing on the number of shares held.
- Return of surplus to members: the profits made from the business conducted by the society should be given to members by way of dividends at the end of financial year.

- Cooperative education: the society should make provision for the education of its members by way of dividends at the end of financial year.
- Cooperative education: the society should make provision for the education of its members and workers by way of newspapers, seminars, workshops e.t.c.
- Cooperation: the societies at local and international levels operate in all ways to meet the interests of their member's e.g. the international cooperative alliance fights for cooperative societies rights internationally.
- Political and religious neutrality. Cooperatives are supposed to be neutral political and religious bodies and interests. The running and leaders of the societies should not be influenced by religious and political affiliations.
- Continuous expansion: The society should aim at continually expanding and allowing new members to join, opening up new branches and increasing the volume of business as much as possible.
- Limited interest on Capital: The contributed capital should earn limited interest and the rest ploughed back into business to allow growth of the co-operative society
- Unusual risk must not be undertaken. Only legal business activities should be carried out and such risk activities like black marketing, dealing in banned goods should be avoided. Cash dealings everything bought or sold should be in cash basis.
- Honesty: people involved must be honest i.e. officials and members.

Benefits of co-operatives to farmers

- They help farmers to produce by providing inputs at low prices e.g. they buy the inputs and transport them in bulk so that the average cost price becomes low for each member. They may be seeds, tools, fertilizers. E.t.c.
- The members share the overhead costs like depreciation on machinery house rents, salaries of workers in order to get a higher net income. They can also employ specialists to advise them at a low cost.
- Members obtain credit to assist in farming activities and may eventually increase the volume of products and their quality.
- Rural leadership and cooperative community spirit is developed much better in areas with coop.
- The members in a cooperation society have a larger bargaining power for better prices and even conditions in purchasing.
- They eliminate unnecessary exploitation by middlemen in the sale of the products and buying of inputs by dealing with manufacturers or exporting their produce directly.
- They can employ well trained and experienced staff to work for them for higher efficiency e.g. secretaries and secretary managers.
- They obtain agriculture education and other information concerning the production of crops on a large stock and marketing them in the best way.
- Transportation, storage and processing as well as savings may be done profitably at low costs obtaining low profits.
- Some members or their children find employment opportunities within the cooperative societies or unions.
- Research activities can be easily carried out to improve the existing technologies – marketing costs and reduced and job is done efficiently.

Problems facing co-operatives in Uganda

Political problems: The running of cooperatives is disturbed by politicians who influence decisions and disobey the democratic principles.

Management problems: the leaders and managers lack transparency and misuse the resources of societies leading to failure in their performance e.g. lending to unauthorized people to themselves e.t.c.

- Dishonesty of members. Some members when given advanced loans fail to pay back in time. They refuse to pay savings, interest e.t.c. and this leads to the collapse of the societies.

- Lack of flexibility in taking decisions: Major decisions are taken in a general meeting and this seat for once or twice a year and this makes them fail to take advantage of some opportunities.
- Low levels of Education: Most members are illiterate or just unaware of the techniques of running the co-operative societies. This makes them fail to supervise the employed staff that sometimes decide to embezzle their funds.
- Negative attitudes towards co-operative societies: Many societies have failed countrywide due to corruption, dishonesty and lack of commitment. This causes some members of the public to have a low opinion between them.
- Inadequate capital: there's low volume of business due ti low capital which leads to low profits that cannot keep the societies growing properly.
- Lack of commitment by members: A large number of members do not follow up the business if a society and do not stand confidently to blame wrong activities such the societies collapse under their nose.
- Expectations being high form members. If their expectations are not met, they lose trust in the cooperative and thus it is bound to collapse.
- Lack of proper market for commodities the cooperative are involved in.
- Existence of tertiary marketing boards that deprive the involved in.
- Poor storage and poor marketing facilities has caused most goods and products to be lost.
- Embezzlement of funds by some members/ accountants.

Factors make cooperatives to succeed.

1. Adequate funds: funds are needed for correcting stores and making prompt payment of members produce.
2. Adequate volume of business: The volume of business should be large enough to enable members benefits from economics of large scale operation.
3. Goals and objectives: These must be clearly defined and known to the members.
4. A high level of entrepreneurship. Good management is necessary for efficient running and cooperative embezzlement leads to disaster.
5. Interference. There should be little or no interference in the day to day running of cooperative.

AGRICULTURAL CREDIT

This is the borrowed capital used by farmers to finance their activities. It's a credit in cash or kind extended to farmers. Agricultural credit is found to be in three types:

- Short term credit; this is intended for working capital i.e. buying fertilizers, seeds, sprays, fuel, foodstuffs, hiring machinery or labour e.t.c its normally repayable within a year.
- Medium / intermediate term credit; This is used for minor land improvement e.g. fencing and purchase of farm machinery plus livestock. Its normally repayable within 5 – 15 years.
- Long term credit; This is mainly used for purchase of land or major improvements on the land e.g. soil conservation works and land reclamation, buildings e.t.c. its normally repayable over 15 -30 years.

Classifications of Agricultural Credit

There are also classifications of agricultural credit and those are;

- Hard Credit; This is given against substantial security usually immovable assets like land, buildings e.t.c
- Soft credit; this is offered without security or against little security including movable assets like machinery.

Sources of Agricultural credit

- Agricultural credit is got form a commercial banks e.g. Stambic bank, Nile Bank e.t.c.
- It can also be got form cooperative banks e.g. rural cooperative development banks.
- It can be got form cooperative societies
- It can be got from crop boards e.g. coffee development authority.
- Through government schemes e.g. entandiikwa

- Through societies
- Money can be got from micro – finance societies e.g. pride, FINCA the common finance trust.
- From licensed money lenders
- Informal credit borrowed from friends and relatives

Benefits of Agricultural credits

- It enables farmers to finance their activities through the productions season e.g. paying salaries and wages to the workers
- It provides capital of building up an enterprise e.g. crop, animal machinery enterprises in his farming activities.
- It enables farmers to cope with his total failure by giving the farmer the capital to continue farming or survive on during hard times.
- It enables the farmer to purchase or finance current inputs e.g. the drugs in process of trying to increase his or her production.
- Capital may be for consumption e.g. for constructing the family, building, buying clothes e.t.c
- It may be used for land registration
- It may be used for construction of farm buildings, stores e.t.c.

Categories of Agricultural Credit.

- Consumption credit: this is used to cater for the expenses of the family more especially it is used for buying things that are used in homes e.g. clothes
- Cultivation finance: This is used for buying production inputs e.g. fertilizers, pesticides and insecticides. Its often short term and is often provided in kind.
- Development finance: this is used for introduction and expansion of farming and processing operations e.g. establishment of ranching schemes, purchase of ginneries, coffee pulpuries, crop driers e.t.c
- Commercial finance: This is used for promotion and sustenance commercial activities e.g. transportation, advertisement. E.t.c.

Interest

An interest is the fee charged for use of borrowed capital from any financial lending institution. Its calculated as percentage of total credit and its usually paid annually.

Factors affecting interest rate.

- Demand for the credit. The higher the demand, the higher the interest rate.
- Supply of the loan. The lower the supply of the money that can be lent out, the lower the interest rate.
- Losses due to default. The higher the losses due to default, the lower the interest rate because the bank would not recover their money and this can be classified as risky.
- Decline in valve of money: (depreciation). The higher the rate of depreciation of money in an economy, the lower the rate of interest.
- Government policy. The government may cause a rise or fall in interest rates through raising or lowering the interest rate at which it lends to the bank.
- Interest paid on deposits that finance the loan: Most loans are from deposits of people who save with the bank or financial institution. This money has to accrue interest for the depositors.
  For a particular loan, the interest charge would depend on:-

- Size of credit i.e. amount of money you have taken
- Type of credit i.e. whether short or long or medium terms.
- Credit worthiness or collateral security of borrower

LOAN APPLICATION

All information concerning the loan should be gathered and sent to the loan agency. The application form should have the following:-

- Personal data i.e. should have the name, family status, list of dependents and permanent address.
- Economic status i.e. type of business, size of the farm, location of the farm, land tenure system, the crops cultivated or animal kept.
- Loan requirement i.e. amount of money required, period of repayment, purpose of the loan, security offered e.t.c and information should be confidential.

Assessment of Loan Applications

Assessment is an economical appraisal of loan application. It must cover the following;

- The economic situation of the farmer i.e. compare his assets or liabilities.
- The purpose of the loan, production loans are usually given priority over consumption loans.
- Purpose of the loan in the relation of the requested amount of the money. It should be appropriate to the purpose of the loan. Insufficient credit will lead to wastage of funds. Also the period of repayment of the loan should be related to the purpose of the loan. The duration of the loan should be adjusted according to the purpose of the purpose of the loan and the liquidity of the applicant.
- Intended contribution of the farmer to the project. The loan is easier to give to a farmer who has a substantial stake in the project.
- Security offered or collateral. The collateral offered should be equal or greater in value than the loan requested for.
- The capacity of the applicant to repay the loan. This is estimated basing on the assets and liabilities of the applicants.
- Previous loan history. Loan agencies are more reluctant to lend money to new clients than they are to lend money to those they are previously dealt with on the loan issues.

Why farmers sometimes fail to repay back the loans.

High interest rates. These make the amount to be repaid by the farmer much high rates. These make the amount to be repaid by the former much higher than the profits that the farmer may have made of the use of that loan.

Inflation: This may erode the value of the loan money making if both unable to cover the intended job and also very hard to pay back especially if the loan was quoted in foreign currency that appreciates as the local currency depreciates.

Failure of production: e.g. crops or livestock, the farmers venture may fail e.g. due to bad weather conditions/ hailstorms, heavy rains) pests and diseases like locusts, termites, e..t.c

Fall in price/ poor market. The farmer may produce and yet fail to find the an acceptable market due to changes in tastes, fall in prices e.t.c.

Unsuitable conditions attached to the credit. Some credit instructions attached have unacceptable instructions or restrictions on the usage of the credit and so restricts the farmers flexibility in respect to market conditions.

Unrealistic repayment schedule. The loan period may be too short or too long making the farmer overloaded in repayment of the loan.

Political instability: This may lead to destruction of farmers assets and make it hard for and farmer to produce thus rendering him incapable of repaying the loan.

Poor culture of loan repayment. Many African farmers have a poor attitude towards a loan repayment and do not want to pay even when they are able to pay.

Low levels of education of farmers hence low powers of negotiation and poor records. This makes it difficult for the farmer to know whether they are making profits or business venture. The farmers therefore make their own business decisions and so are not able to make enough profits to services the loan.

Misappropriation or misuse of loan. Many farmers misappropriate the loan especially if its in cash e.g. a farmer may use a loan intended to boost production process. The farmer may then not be in position to implement his production plans to his satisfaction.

Measures to make Agricultural credits more effective

- Agricultural credit should be offered as part of an intergraded agricultural development program. The program should include extension services to advise farmers on how to use the loans. The intension worker should help farmers to choose/ choose viable ventures that are manageable by the farmer.

- Credit programmes should be accompanied by measures to develop a commercial attitude to farming and definite encouragement of saving in the farming sector.
- Agricultural credits in developing countries must be sponsored by the government primarily as "Public Service" and investment for agricultural development rather than banking business enterprises. This is because many commercial banks shun leading to agriculture because it's too risky.
- Training programmes for agriculture credit personnel,, cooperative societies stuff and supervisors should provide regularly to enable them handle farmers appropriately.
- Agricultural credit should have an active credit policy that takes the credit to farmers rather than waiting for the farmers to come for them. This is to increase awareness of the availability of credit and help overcome the conservativeness of the farmers. Security demanded by the credit institutions should be within farmer's means. For instance on immovable assets and insecurity is likely to limit the facilities to be relatively wealthy. The credit should therefore be soft.
- All agricultural institutions in the country should work together and coordinate their activities to avoid implication of effort. They should monitor their work a view to identify their strength and weakness and so improving the credit system.
- Government should provide other services like adequate transport and communication, infrastructure, security, health services e.t.c. to complement agricultural credit programmes and ensure success of the credit program.
- Where possible and necessary, agricultural credit to inexperienced farmers should be given mainly in kind.
- Credit institutions should ensure regular visits to farmers to supervise the utilization of the loans.
- The interest charged by the leading institutions should not be high to encourage farmers borrow.
- Give loans to farmers in time. The paper work should be at minimum in order to save time and this will encourage farmers to use the money in the appropriate time.
- These should be a moves/ moves to ensure provision of inputs to the farmers at fair price.
- The marketing of farmers' produce should be improved to be able to dispose the increased output that will arise from the increased supply of capital.
- Credit institutions should give a reasonable grace period to farmers and also give a suitable loan repayment schedule to farmers.
- Where possible the credit to be given to the farmers can be given in a relevant portions at specific time.

EFFICIENCY OF FARMING

This is the measure of physical or financial performance of a farm. It helps the farmer to identify his weaknesses and strength and so enables him to improve his farm. OR it is a measure of any farm enterprise or entire farming system necessary to identify weaknesses and strength in areas of poor performance so that they can be improved.

Efficiency standards

These are measures or guidelines used to compare the performance of two or more farms. They are several types of efficiency standards.

1. Economic efficiency: This compares the yields obtained with the average expected yield obtained through research or the cost of production are weighed against the returns obtained e.g. if both farmers obtain 1.5 liters of milk per day from their goats which sells at the same price but their production cost differs, the difference in profit is a measure of economic efficiency.
2. Technical Efficiency: This is the measure of physical output per unit input. It compares the output of the farm of the same size, type and identify, e.g. 1 farmer produced 2500 kg and another farmer produced 3500kg of maize from1 hectare and both used the same amount of seeds, fertilizers and labour and even both had the same type of soil and growing conditions during the same season.
3. Partial efficiency standards: this one is an assessment made on the efficiency that is carried out on a particular farm enterprise. These are two simple ways of comparing yields;
    a. Yield index: the efficiency of carrying out an enterprise within a farm is measured by yield index.

The yield index = $\frac{ActualYield}{ExpectedYield} x100$

The actual yield from 1 hectare of cabbage of ground nut is compared to efficiency of expected yields.

b. System index: The yield of a particular enterprise is compared with that of a similar farm e.g. the number of eggs from 100 layers of farm A is compared to farm B.

$= \frac{Yieldonfarm A}{Yieldonfarm B}$ x 100

If any index is lower than 100%, it means that a farmer may have to improve his efficiency. It's imperative that a farmer should always try to improve his own efficiency using his resources that he has instead of comparing with his neighbor.

4. Overall Efficiency: Assessment of efficiency standards can also be done by looking at the farm as/ unit. This means that profits from each of the enterprise on the farm are summed up and the average profits per hectare is obtained. Percentage of returns of capital show you the overall efficiency of the farm.

Thus overall efficiency = $\frac{profit}{capital} x100$

Factors influencing efficiency in farming

- Price: the price of the products and the price of the input usually affect the efficiency of the farmer. This is because most farmers are poor planners as far as their farming enterprises are concerned.
- Managerial ability of the farmer: i.e. ability to make sound production decisions, ability to carryout agronomic practices on time e.t.c.
- Records kept: farm records enable the farmers to know the economic situations of their farms. They enable the farmer to know the best enterprise to pursue.
- Size of the farm: under good management, the bigger the farm the more returns for each unit of labour and capital utilized. This because in large scale production, a farmer benefits from economies of scale.

FARM RECORDS

This is the information which provides a picture of physical and financial information of the farm which is the basic information for decision making, budgeting and farm planning. In many cases, the farmer also keeps records but does not analyze them for full use as a decision making tool usually finds problems in their farming process.

Parts of the farm records

Farms are made up of several enterprises so each has an enterprise statement. Not all records of the farm have equal importance, but certain basic information is necessary in order to provide a complete and accurate financial picture of the farm business.

i) Farm inventory; provides the valuation, depreciation and or appreciation of machinery, livestock, buildings, land, farm equipment supply and crops on land

ii) Profits and loss sheet or trading account; this usually shows daily, monthly and annual transactions, or sales and purchases in a systematic fashion.
This is really a cash flow picture of the year's transaction.

iii) Late income statement: This shows the amount of equity or farmer has inform at any particular time.
The above records are essential for analysis of the farm business. They are basic tools for analysis and decision making on the farm. However, for enterprise records must be done to fit each farm situation and so data can easily be used in summary accounts.

Importance of farm records.

1. Farm records show the past records/ events on the farm. They show how particular enterprise have performed up to date. Farm records are therefore very useful for planning for the future.

2. It helps in tax assessment. If records are not kept properly, one can easily be asked to pay too much tax. This therefore it helps in the equal distribution of taxes among farmers.
3. Its easy to spot any weakness in the organization of the farm and this is relaly possible for one to improve his farm enterprise.
4. It helps in giving information which will show whether farm plans are being operated correctly.
5. If records are kept consistently, they show the physical input and out relationship. Its possible e.g. to know the yield potential of a crop grown in a particular plot on the farm or the expected rate obtained from productive livestock.
6. Helps farmers to get loans from the bank, the bank will require proper farm records. This will help the bank to decide whether or not to give the farmer a loan.
7. They help in calculating the efficiency of the farm.
8. Enables the farmer to remember his debts and pay them.
9. In co-operative farming, records helps in sharing profits and loses.
10. Acts as incentive to the farmers as to show his of progress.
11. Shows the history of the farm and its developments.
12. Helps the farmer to curl out unproductive animals.
13. Shows the financial stand of the farmer.
14. Helps in valuing the farm in case of sale.
15. Health records enable farmers to control diseases.
16. Shows the farmers' expenditures and income
17. Helps in breeding by showing an animal lineage of parentage.
18. Shows whether farm plans are beings operated correctly.
19. It's a legal requirement in certain country e.g. in certain country e.g. in Denmark, every farm enterprise in this country should possess farm records.
20. It helps in setting the estate in case of death
21. Helps the farmer in making insurance claims.
22. Helps the farmer in decision making and planning.

Types of Farm Records.

- **Crop records:** These are used on farms producing crops and they may be subdivided to individual crop but generally shows sales, expenses, yield of all crops on a farm, agronomic practices costs of inputs e.t.c. these crop records are of special important in budgeting
- **Livestock record**: include the description (by age, sex and purpose served in the livestock enterprise of livestock and its products. These show the decrease and increase in livestock number and become more important in beef daily poultry and pigs increase in the farm business.
- **Analysis records**: Where the level of mechanization is low, labour records are very important. These records will show the amount of labour used, the cost of each unit of labour and distribution of labour throughout the production period. Labour records may be very useful in planning labour utilization.
- **Analysis form:** Are necessary in order to summarize and evaluate the performance of funds as a whole and enterprises in particular. There's no standard form which is equally satisfactory for all forms but which ever farm used should provide information, the operator needs to analyze his farm business.
- **Enterprise accounts**: Have many complications and problems. The controvacy over how to organize and determine the effects of margins are generally accepted as a measure of enterprise performance. These show the difference between the total revenue and variable costs for each enterprise on the farm and provide a quick picture of the gross profitability of the various crops and livestock enterprises.
- **Health records:** These show disease incidents, treatment given to the animal, type of chemical used in treating the animal, type of chemical used in treating the animal, date of treatment e.t.c.
- **Breeding records**. These show items like profits, losses, total sales for each day or month, daily income for each enterprise.
- **Farm inventory records.** These usually show the assets of the farm that the farmer possess. E.g. buildings, land, machinery

- **Feeding records:** These show the amount of feeds given daily, type of feeds given to animals, types of income

Terms used in Accounting

Farm inventory: Is a list of all assets that is owned or owed by the farmer at a given period of time.

Assets: All property having a money value and includes all items illegal possession of a person/ farm, including claims against other property. Assets include land, buildings, accounts and notes receivable, machinery, livestock, personal effects inclusive of cash and bank balance.

Types of Assets

I. Current assets are those which would be used up and turned into clash in a short period. These include cash, seeds, fertilizers, livestock, feeds and crop and livestock to be sold within a year.
II. Fixed assets. These are assets that can be used several accounting periods, include building s, land, permanent equipment and breeding livestock.
III. Liabilities: Are legal claims by others on your property such as local merchants account and accounts not payable.

Types of liabilities.

I. Current liabilities are those payable within a year e.g. accounts payable to local merchants and co-operatives.
II. Long term liabilities are those payable over a period of time e.g. land mortgages and payments on machinery (tractors e.t.c)
III. Not worth liabilities equals to total asset minus local liabilities or the proportion of business assets which the farmer actually owns. This is sometimes called equity.

- ✓ Accounts are systematic arrangement s of financial information and this may apply to the whole farm or any enterprise on the farm.
- ✓ Debt is a change to a person or an account and sometimes its referred to as a reduction.
- ✓ Credit is a payment to an account or a receipt of income.
- ✓ Farm receipts are income from sales of production, rent for land and income from machine time work.
- ✓ Farm expenses are those cash costs of farming and include expenditure on feeds, seeds, fertilizers, insecticides, on veterinary expenses and machine time or fuel and repair for a tractor and machinery.

Cash Analysis

This is a simple and clear method of presenting farm records. Records are kept for each enterprise and transaction carried out throughout the year and they are entered under the appropriate headings. The cash analysis book is divided into sheet for purchases and expenses plus sales and receipts.

Sales and appear on the left hand side/ page while expenses and purchases appear on the right hand page. Entries are made in the appropriate column throughout the year. At the end of the year each column is totaled to check whether the entries were collectively done and the total received column should agree with the total of all the columns under sales and receipts plus expenses and purchases and the balance at the beginning.

If by the end of the year sales and receipts are more than the purchases and expenses, the farm has made a surplus because it has received more money than it spent on the farming business. In this case, the different is recorded under purchases and expenses.

If on the other hand the expenditure is more than sales and receipts the farm has made a loss. In this case, the difference would be recorded under total paid. At the beginning of the year, the farmer has nothing to start with so he has to borrow money or get an overdraft from the bank.

Simple cash analysis:

Sales						**Purchases and Expenditure**						
Date	Name and Detail	Total received (shs)	Maize (Shs)	Milk F	Vegetables	Date	Name and Details	Total Paid	Fertilizers	Feeds	Wages	Seeds
31/6	Opening balance being cash at bank	112000				17/2/99	25 tonnes of SSP fertilizers at 2000 – 10 tones of nitrogen fertilizers at	50,000 25000	50000 25000			
4/7	20 bags of maize at 3000	60000	60000			22/2	120 bags of feeds at 1500, 3 bags of maize sold at 600 vegetable seeds.	180000 1800 5000		180000		1800 5000
14/9	Sold 1500l of milk at 100	150000		150000								
26/9	Cabbage	220000			220000	30/9	Paid wages	165000			165000	
26/9	Tomatoes	126000			126000	Closing balance being in cash = 426800 + 241200		668000	75000	180000	165000	6800
Opening Balance in Cash is 668000 – 426800 = 241200/=			60000	150000	346000							

THE TRADING ACCOUNT (PROFIT AND LOSS ACCOUNT)

This shows the income and expenses incurred on the farm during and stated period of time, usually 1 year. It also shows how the inventory are changed (Crops, livestock) during the same period of time and the estimated depreciation plus depreciated assets, building, machinery and equipment. The structure of profit and loss account is as follows:

Purchases and expenses	Sales and Receipts
Opening evaluation Net Profit	Closing evaluation Net Loss

THE TRADING ACCOUNT FOR MR.BUA FOR THE YEAR ENDING DECEMBER 1982

Purchases and Expenditure (Shs)		**Sales and Receipts**	
Cattle	210000	Cattle	175000
Fertilizers	25000	Milk	350000
Feeds	75000	Cabbages	112000
Wages	197000	Beans	100000
Rent	10000	Eggs	171000
Debts Payable	10000	Debts Receivable	192000
Drugs	96000	Closing Evaluation	750000
Poultry	87000		
Seeds	500000	Net Loss	
Opening Valuation	1,660,000	1850000	
	1410000		
Net Profit	350000		
	1.760.000		

NOTE:

- That there's a heading stating the duration on the account.
- Purchases and expenses are entered on the left hand side while sales and receipts are entered on the right side.
- Expenses or receipts items should be summed up and entered as totals.
- The value of all items on the farm at the beginning of the year is entered as opening valuation under purchase and expenditure. If the farmer had to buy a farm at the beginning of the year, that would be his profit.
- The value of assets on the farm at the end of the year is known as closing evaluation. These are entered on the side of sales and receipt.
- There's a net profit or net loss. A net profit is got when sales and receipts exceed the purchases and expenditure and a net loss when the reverse is true.
- When a trading account is completed both sides have to balance. The net profit usually appears on the purchase and expenditure side while a net loss appears on the sales and receipts side.

ACTIVITY

1. Construct a profit and loss account for Wasswa's trading account for the year ending 31st December 1956.

Opening valuation	12000		Depreciation		50
Seeds Bought	200		Interest on loan		40
Fertilizers Bought	200		Repair and Maintenance	130	
Rent	200		Chickens Bought	80	
Labour	250		Cows bought		100
Expense	100	Feeds		250	
Closing Evaluation	10000		Poultry sold		500
Grains Sold	1200		Vegetables Sold	50	
Milk Sold	600				

2. Construct a loss and profit account for Mr. Beta farm enterprise for year ending 1987 using the following information.

Sales of Cattle	400000	Purchase of Cattle	700000
Sales of Milk	1000000	wages to workers	1500000
Purchase of Drugs	125000	Sales of Cabbage	700000
Sales of Beans	400000	Debts Payable	400000
Purchase of fuel	396000	Purchase of seeds	30000
Opening Evaluation	2000000	Debts receivable	300000
Rent for land	90000	Purchase of Poultry	600000
Closing Evaluation	2000000	Purchase of seeds	400000
Sales of cults	800000		

1) The profit and loss account for Mr. Wasswa for ending the year 1956.

Purchase and expenditures (shs)		Sales and Reciepts (Shs)	
Seeds Bought	200	Depreciation	50
Fertilizers Bought	200	Poultry Seed	500
Rent	200	Vegetables Sold	50
Labour	250	Milk Sold	600
Expense	100	Grain Sold	1200
Repair and Maintanance	130	Closing Evaluation	10000
Interest on loan	40	12400	
Chickens Bought	80	+ 11500	
Cows Bought	100	135500	
Feeds	250		
Opening valuation	12000	Net Loss	1150
	13550		

2) The trading account for Mr. Beta farm enterprise for ending year 1987.

Purchases and Expenditure (Shs)		Sales and Receipts	
Purchase of drug	125000	Sales of Cattle	400000
Sales of fuels	396000	Sales of Milk	1000000
Rent for land	90000	Sales of beans	400000
Purchase of cattle	700000	Sales of culls	800000
Wages to works	1500000	Sales of cabbage	700000
Debts payable	400000	Debts receivable	300000
Purchase of seeds	30000	Closing evaluation	2000000
Purchase of poultry	600000		
Purchase of seeds	400000		5600000
Opening evaluation	2000000		641000
	6241000		6241000
		Net Loss	641000

Balance Sheet

This is the statement drawn up to show the financial stand of the former on a particular date. It shows the liabilities and these are the debts and obligations, i.e. all that the farmer should pay to other people. They include: loans, money that the farmer has to pay out but has not yet paid i.e debts payable, overdrafts at the bank, depreciation (loss of value of a commodity with time). Liabilities appear on the left hand side of the balance sheet. Assets are items on the farm and the value. Assets include the value of machinery, crops, livestock, equipment's, houses e.t.c . the money that a farmer hopes to get from the goods but not yet paid for is called debts receivable Assets appear on the right side of the balance sheet. The total of both sides of the balance sheet must balance. Where the value of assets is greater than liabilities, the difference is called net worth or net capital and is recorded

under liabilities. i.e. that would be the money the farmer owes thee farm. Any prepaid expenses can be inform of goods or services paid but not yet delivered.
If the liabilities are greater than the value of assets, the difference is recorded under assets and is called net loss. The farmer would then be said to be bankrupt i.e. even if he sold off all his property, he would not be able off his debts. E.g.

Balance sheet of Alpha farm as at 31st December 1927 using the following information.

Cash in Bank	8000	Debts receivable	2000
Bank over draft	15000	Value of Sheep	5000
Debts payable to Cop union	15000	Value of Cattle	20000
Value of land	40000	Value of Coffee	45000
Long term loan	50000	Value of machinery and equipment	35000
Value of Buildings	45000		

Balance Sheet for alpha farm on 31/12/1927

Liabilities		Assets	
Bank Overdraft	15000	Cash in bank	8000
Debts payable to Co-operative union	15000	Debt receivable	2000
Long term loan	50000	Value of land	40000
		Value of sheep	50000
Total liabilities	80000	Value of cattle	20000
Net Capital	165000	Value of coffee	45000
	245000	Value of Building	45000
		Machinery and equipment	35000
		Total Assets	245000

i) Constructt a balance sheet for Tumusiime farm as at 31st December 1996 using the following information.

Value of implements	1250000	Bank Overdrafts	1450000
Debts Payable	320000	Cash in Bank	288000
Value of crops	300000	Depreciation	60000
Prepaid expenses	600000	value of buildings	200000

Balance sheet for Mr. Tumusiime's farm at 31st December 1996.

Liabilities		Assets	
Debts payable	320000	Value of implements	1250000
Bank Overdrafts	1450000	Value of Crops	300000
Depreciation	60000	Value of livestock	300000
		Prepaid Expenses	600000
Total Liabilities	1830000	Cash in Bank	288000
	3370000	Debts receivable	462000
	5200000	Value of Buildings	2000000
		Total Assets	5200000

Farm Budgeting

A budget is an estimate put on paper to determine the economic results of change in costs and returns over a given period of time. In most cases, budgets of a farm are usually done per annum.

Types of Budget

There are two types of budget that can be drawn.

1. Partial budget: If the farmer wants to make small changes involving only a small portion up the farm or a few enterprise a partial budget is used.
2. Complete budget: On the other hand, if there's a major change, a complete budget is necessary. In either case, gains have to be taken into account.

When making budget, the following have to be taken into account.

a) Least cost combination of factors used on the farm: farm resources are limited and often the use of one resource on one enterprise diminishes is availability for another purpose. The important thing is to allocate farm resources so that the highest returns are obtained from their use.

b) Opportunity cost: Refers to the returns given by using limited resources to produce one item instead of its next best alternative. Several budgets may have to be made to determine the most appropriate alternative.

c) Expectation throughout the time: because situations on the farm may change with time, a budget drawn up today may become useless if the conditions change. Therefore, expected future changes should be taken into account.

General format of constructing a budget.

Losses	Gains
Added Costs	Added Receipts
Reduced Receipts	Reduced Costs
Differences in the estimated increase in profit	Difference in estimated loss.

Importance of budgeting

The farmer may use some of the following information in making a budget.

1. Results from controlled experiments / research stations. This may however have some draw backs
2. Such results may not include an economic components e.g. the data will show the expected yields but not the production costs
3. Production under capital conditions is often much higher than normal conditions.
4. Data concerning the input and output relationship.

This also has some short comings;

- Some products are joint and share inputs and costs that are difficult to separate e.g. hides and beef.
- Production resources are not uniform and vary from farm to farm, soil fertility, type of capital and even management may vary substantiary different locations.
- The figures may not be accurate since they depend on how the farmer can record the amount of input used and the yields are continuous throughout the year or part of the products used at home, the problems.

3. Data on the price on the inputs and outputs. Generally the price of inputs are more stable than the price of products. Such information may be obtained from the various manufacturers of agriculture and the survey of the market price. Present products market price however be projected into future to get an accurate budget.

4. Farm records, if they are well kept, they can enable the farmer to make very accurate budget. The gross margin of various enterprises are particularly important.

If added receipts plus reduced costs are higher than added costs plus reduced receipts, then a farm is profitable. If the reverse is true, then the changes can only lead to losses.

Constraints/ problems to budgeting

- The farmer may not recognize supplementary/ complementary enterprise which could be produced without too much added costs.
- The farmer may not have imaginations.
- There may be lack of technical information and so unused resource or not be recognized.
- Important that the farmer's interest in optimizing returns is sustained.

Gross margins.

Gross margins is the difference between the total revenue and various costs. A farm has 2 kinds of costs i.e. fixed costs and variable costs. Fixed costs are those that continue to meet irrespective of the level of production of the farm. Because of their nature, fixed costs may overlap from one enterprise to the other. A tractor e.g. may be used to clear land for several crops in addition to transporting and sometimes processing farm produce.

Variable costs on the other hand can be assigned to individual farm enterprise. They are therefore more useful for comparing two or more enterprises on or between forms.

Gross Margin = Total revenue – Total variable costs

Gross Margin can also be used to find out the total profit of a farm. This is obtained by adding up the gross margins of all the enterprises on the farm and subtracting the fixed costs P = TGM – FC i.e.

Total Gross Margin – Fixed Cost = Profit

Its important that all relevant variable costs are included when preparing gross margin, such costs like family labour, seeds, feeds produced on farm must be included.

Steps to follow when carrying out budgeting (Procedure)

1. State the objectives of the business.
2. List all the available resources
3. Estimate the hectares against livestock to determine the stocking rate.
4. Estimate the physical inputs and outputs
5. Work out an estimate of fixed costs such as rent and interest on borrowed capital.
6. The factor and product costs should be estimated as well as costs of labour, management e.t.c.
7. The expected profit should be worked out.